

# The Boston Medical and Surgical Journal

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## Original Articles.

### THE SALVAGE OF THE BACKWARD CHILD.\*

BY WALTER E. FERNALD, M.D., WAVERLEY, MASS.

*Superintendent of the Massachusetts School for Feeble-Minded.*

MASSACHUSETTS was the first state to appropriate public money for the benefit of the feeble-minded, and in 1848 established the first public institution in America for the care and training of the feeble-minded. In 1912, sixty-four years after Dr. Howe opened this School, the year the Massachusetts Society for Mental Hygiene was organized, the state provision for the feeble-minded was as follows: The school at Waverley, with 1600 patients in training and custody, and a waiting list of nearly as many more; the out-patient clinic held one day each week at the Waverley School; the out-patient clinic at the newly opened Psychopathic Hospital in Boston; the newly opened School at Wrentham with 400 patients, was in full tide of construction; there were several special classes for defectives in the Boston Public Schools, and a few in Springfield and others cities of this state.

\*Read at the Conference on Mental Hygiene at Ford Hall, Boston, April 12, 1923.

At this conference, it will be of interest to record the advances made in the care and training of the feeble-minded in this state since 1912. Some of the important changes are as follows:

1. The Wrentham School, with its splendid equipment and personnel, now has 1500 patients under training and care.

2. The Waverley and Wrentham schools each have a social service department, giving after-care in the community to more than 500 trained patients formerly supported by the state, and now at liberty, under supervision, earning their own living and generally behaving themselves.

3. The out-patient departments of these two schools now examine and give advice to more than 1500 defectives annually. The advice given enables the great majority of these people to be safely and comfortably cared for at home instead of being in custody and supported at public expense.

4. The mental examination of all school children in the state, three or more years retarded, is provided for by the so-called "School-Clinic Law" of 1919. This law has now been in successful operation for two years. The state has been divided into 13 districts, including every city or town in the state; each district has been assigned to one of the state mental hospitals, and each of these hospitals has organized a clinical group consisting of a psychiatrist,

a psychologist, and a social worker, who examine the retarded school children in the different towns in the district.

In other words, the state has drafted its own experts into the service of the state for the benefit of every feeble-minded school child within its borders. This school clinic serves even the smallest and most remote town in the state. The result of the examination and specific advice as to training and care is given to the local school authorities and usually to the parents. The annual or more frequent visits of the travelling clinic provide continued treatment through the school age. The great majority of the defectives seen can live at home and be trained in the local school. Neglected or troublesome defectives are drafted into the institutions before they come to grief.

The great opportunity of these clinics is to so inform the family and the local authorities that a feeling of local responsibility for the welfare of the defective will be created. The necessity for such *social supervision* of the defective child is the most important advice given. This social supervision is being most intelligently supplied by the teachers, visiting teachers, attendance officers, and school nurses in the various towns, and is merely a new expression of the old principle that the public school has a definite social and moral responsibility for every pupil.

Over 8000 children have been examined and advised in the two years since the school clinics were begun. The sole purpose of the clinic is constructive and to benefit the child. The school authorities have splendidly co-operated and the parents have almost universally been appreciative and grateful for the advice and assistance.

This procedure gives access to every defective child in the state during the formative period of his life and forms a basis for intelligent training and treatment. No other state or country has begun this work on a similar scale. It is practical mental hygiene in the broadest sense.

5. The same law of 1919 requires that every city or town having ten children, three or more years retarded, shall establish special school classes for the instruction of these children. This part of the law also is rapidly being put into effect. The defective child will be given scholastic and social training according to his needs, and also will be given the industrial training which is necessary if he is to earn his own living. The problem of furnishing the teachers of rural schools having less than ten defective pupils, with the knowledge and equipment needed for their training, is a problem which is partly met by the special instruction now given in the Normal Schools of the state. Eventually a travelling teacher will probably be provided to regularly visit and help the teach-

ers of all such pupils, and adequate text-books and other information will be supplied to every teacher.

6. The census or enumeration of all the feeble-minded of the state is rapidly progressing, as the name of every defective child diagnosed by the school mental clinic or in any other mental clinic in the state is reported to the Department of Mental Diseases with a description of the case, thus furnishing a basis for intelligent management of all the feeble-minded of the state.

7. The law of 1911 requiring special long-continued custodial care for defective delinquents was finally and most successfully put in operation in 1922 by the opening of the department for defective delinquents at Bridgewater. Seventy-eight desperate feeble-minded and probably unreformable criminals between the ages of 17 and 34 have already been committed under this law. The custody of these dangerous defectives is a permanent protection to the community. In time, practically all of these defective criminals will be in permanent custody, instead of being discharged at the end of a brief sentence, to commit other crimes.

8. A law passed in 1921 modified the commitment of the feeble-minded so that he may be committed to the custody of the Department of Mental Diseases, and that department has the option of placing him in custody in one of the institutions or of allowing him to remain in the community under supervision so long as he conducts himself properly, thus providing for extra-institutional control of proper cases for an indefinite period.

9. A law passed in 1922 provides that the state schools for the feeble-minded may parole any suitable inmate for any length of time, and may recall him to the school at any time if he violates the conditions of the parole. This will permit controlled release of many persons who otherwise would be supported for life by the state.

10. The present Legislature has authorized the Department of Mental Diseases to conduct a Division of Mental Hygiene with authority and personnel to assist and supervise and control suitable feeble-minded persons in the community, thus establishing extra-institutional supervision of the feeble-minded on a definite basis. The effect of this and other similar provision will make it possible for many feeble-minded persons to enjoy their liberty and earn their own living who would otherwise need permanent custody and support.

11. The Legislature of 1923 has also granted an appropriation to the Department of Mental Diseases for the scientific study of the causes of feeble-mindedness, with the hope of furnishing knowledge which may prevent the occurrence of certain types of feeble-mindedness.

The state spends millions every year for the care of the feeble-minded, but has never before spent one penny for studying the prevention of feeble-mindedness.

12. The city of Boston alone now has 80 special classes for defective children, with well-organized after-care. These classes are being rapidly established in the cities of the state, and in the large towns.

13. The Belchertown State School for the Feeble-Minded, opened in 1922, now has over 300 inmates, and will be rapidly developed to its capacity of 1500. This school, with its out-patient clinics and community supervision, will fill the long-felt want of supplying the needs of the feeble-minded in the western part of the state.

The state of Massachusetts now has institutional provision for a much larger number of feeble-minded in proportion to its population than is provided by any other state. The ratio is as follows per 100,000 population, viz.:

Massachusetts .....	78
Minnesota .....	60
New Hampshire .....	59
New York .....	39
Pennsylvania .....	31
Connecticut .....	28
Etc., etc.	

The advanced methods of care and training which we have thus briefly catalogued show that this state has now reached an advanced phase of its policy for the management of its feeble-minded citizens; indeed, has gradually begun a program for doing this in an intelligent way, without too great expense to the tax payer.

Modern methods of diagnosis have shown that there are probably 50,000 feeble-minded in the state. The names and residences of over 18,000 are already known. The school clinics alone are uncovering over 4000 each year. It is obviously impossible to support this vast number in institutions at public expense, even if that was desirable.

We now know that feeble-mindedness is not an entity to be dealt with in a routine way, but is an infinitely complex problem, for the feeble-minded may be male or female; young or old; idiot, imbecile, or moron; from good homes and bad homes; there are *good* defectives or *bad* defectives; well behaved or vicious; industrious or idle; they may live in city or country; in a good neighborhood or a bad one; from family stock highly hereditary, or only slightly so, or from good stock—not over one-half are of hereditary origin. No two defectives are exactly alike—what is good for one is bad for another. No routine procedure will meet the needs of this varied group.

In the past the great majority received no attention until they got in trouble. Not over 10 per cent. are in institutions or in special classes.

The keynote of the Massachusetts program is to recognize all defective children at an early age. This is provided for by the travelling school clinics now in operation all over the state. These also will eventually enumerate all of the feeble-minded. This makes it possible to provide special training, education and care for them in their own homes and in the local schools, except for the vicious, the highly hereditary and those uncared for, who will need the institution. Social supervision will be provided by local school officers, who will draft the services of local societies, churches and altruistic individuals. The majority of these defectives have hitherto been harmlessly assimilated into the community when they passed the school age, and a much larger number will do so with the definite social supervision now provided.

The new legal provisions for extra-institutional supervision, and for commitment to the custody of the Department of Mental Diseases, will control and restrain many at the adolescent and adult period. There is always the option of institutional custody if needed. The listed cases in any community, under local care of designated persons, will be visited and checked up by friendly visitors at regular periods.

There are many more *good* defectives than *bad* defectives. The 3500 school defectives examined by our own school clinic in the past two years included less than 7 per cent. with vicious tendencies. Defectives in good homes usually do well. The smaller number who seem innately vicious from early childhood can be cared for in the institutions.

Various surveys and studies apparently show that many feeble-minded persons who have received careful training and education during childhood and early adolescence became harmless and useful members of the community under proper conditions. Many of these people are working and are earning good wages. Many of them have so far shown no immoral or anti-social tendencies. Indeed, the comparative absence of criminality and immorality recorded in these surveys is notable. The selection for community life of individuals whose dispositions and tendencies are suitable is probably of great importance. Those persons who have friends able to control and advise them properly are much more likely to succeed. Indeed, one of the great opportunities of the special-class teacher and the institution is to educate the parents and friends as to the amount of oversight and supervision needed by these feeble folk, even when they reach adult life. The pupils in the special classes come from better families than does the average institution child. The defective with a "black" chart is more likely to go to an institution than to the special class.

The success of these people shows that we have not been quite fair in arbitrarily deciding that

every feeble-minded person must be permanently deprived of his liberty, without careful study of all the circumstances in each case. We find a certain limited number of feeble-minded people who, on account of their amenability to training, absence of character defect, and their temperamental fitness, deserve a chance in the community. Their training in special classes or institutions fits them for this chance by drilling them into habits of orderliness, obedience and industry. The more valuable we make these people economically, the greater incentive to their friends and the community to safeguard and protect them.

The generalizations about the social expression of feeble-mindedness are largely based upon the experience of untrained and neglected defectives. The feeble-minded boy is blamed and punished at home for his stupidity; often neglected or harshly treated by the teacher who does not understand him; teased or "picked upon" by other boys as a butt or joke; with no real companionship, with no one who understands his limitations. Is it any wonder that treated as a pariah from childhood, he should become a sort of Ishmaelite at adolescence? Would not a normal boy so treated turn out badly?

The economic and industrial future of defective children of the type seen in mental clinics and special classes has probably always been more favorable than was supposed to be the case, for if one or two or three per cent. of all school children were not capable of self support after leaving school, the number of adult paupers would be much greater than the present visible number. After-care work with special class graduates shows that many do support themselves.

We have begun to suspect that the problem of the feeble-minded is largely economic. The idle defective has no money, feels inferior, and does his worst. The defective who works all day at good wages seldom gives trouble. The industrially trained defective has a better chance to get work than if untrained. Indeed, if untrained in earlier years, he early becomes the proverbial idle defective.

The majority of the adult male morons and many imbeciles discharged from Waverley for the past thirty years are known to have supported themselves, often at good wages,—\$15, \$18 or \$20 a week,—even before the war and immigrant restriction. Last year 220 trained patients discharged within five years, earned a total of \$198,000.

The boys have learned the dignity of work; they have learned to respect authority, and enter community life without a feeling of inferiority, because they have learned to do many things well. Even some who were dishonest and

malicious at puberty and early adolescence "settle down" in a remarkable way.

In contrast to the moron, it is probable that the majority of idiots and imbeciles will be better off in every way if cared for in the institution, but many of these are now being safely and well cared for at home with the advice and help of the visiting social worker. Morons from families unable properly to protect and control their children will also need institutional training and care.

The fact should be emphasized that the neglected moron is the defective who makes trouble later in life, and that he should receive proper care and training either at home, with the help of the special class, or in an institutional school during the formative period.

The Massachusetts program proposes to recognize the defective's condition while he is a child, and protect him from evil influences, train and educate him according to his capacity; to make him industrially efficient; to teach him to acquire correct habits of living, and, when he has reached adult life, to continue to give him the friendly help and guidance he needs. If conditions are right he may live at home and receive his training in the rural school or in the special class. If he is actually a social menace, he will need the institution. These advantages should be accessible to every feeble-minded person in the state, and not to a few favored persons. The rights of the feeble-minded person and of his family should be jealously guarded, as well as the rights of society. It is most important that the really hereditary defectives should not be allowed to transmit their defect to future generations.

As has been shown, in this state we have now provided for the mental examination of backward school children, the mental clinic, the travelling clinic, census and registration of the feeble-minded, the special class, instruction of parents of defective children, after-care of special class pupils, special training of teachers in normal schools, extra-institutional supervision of all uncared-for defectives in the community, selection of the defectives who most need segregation or institutional care, increased institutional facilities, parole for suitable institutionally trained defectives, and permanent segregation for those who need segregation, especially long-continued segregation of defective delinquents in penal institutions.

There will be centralized formulation of plans and methods, but most of the real work will be done in the local community at much less expense than wholesale segregation, even if that were possible. The plan described will care for the feeble-minded at a cost approved by the tax payer.

The real purpose of this program is to make education and social service, both in the broad-



est sense, the keynotes in the management of feeble-mindedness.

In plain words, the care of the feeble-minded will be largely decentralized and the initiative and responsibility largely shared by the local community. It cannot be done merely by legislative action, but depends largely upon widespread public sentiment.

Since the organization of the Massachusetts Society for Mental Hygiene in 1912, the problems of feeble-mindedness have constituted a good share of the chosen work of the Society—a continuing campaign of popular education in mental hygiene. It is not altogether a coincidence that all the various advances in the art and science of caring for the feeble-minded presented and discussed in these meetings have soon crystallized in the laws of our Commonwealth. Widespread knowledge creates public sentiment, and public sentiment is usually quickly reflected in direct legislation.

### CLONORCHIASIS IN BOSTON.

BY GEORGE CHEEVER SHATTUCK, M.D., BOSTON.

[From the Service for Tropical Diseases at the Boston City Hospital.]

Clonorchiasis or clonorchiosis is caused by infestation of the bile ducts of the liver with the fluke *Clonorchis sinensis*. The principal endemic foci of the disease seem to be in certain provinces in the southern part of Japan, south China in the general neighborhood of Canton, and Korea.

It is difficult to determine what the lesions produced by the flukes are, because flukes have often been found accidentally at autopsy in cases in which death seems to have resulted from some quite different disease, such as beriberi. There is reason to believe, however, that in cases of severe infestation, cirrhosis of the liver, ascites, emaciation, and death may result from clonorchiasis. The cases to be reported indicate, on the other hand, that, as in the case of hookworm infestation, a few ova may be found in the faeces and yet the patient may show no physical evidence of the disease.

The diagnosis in such cases can only be made by careful microscopical examination of the faeces. Such examinations are best made by centrifugalizing an emulsion made with water from a small amount of faeces, by pouring off the supernatant fluid and top layer of the sediment, and by repeating this process several times until a relatively clean residue is obtained. The bottom of the remaining sediment should then be used for examination.

The ova are so small that they may be overlooked when a No. 3 objective is used and they were so scarce in our cases as to be very diffi-

cult to find with a No. 6 lens. One who is familiar with the apparent size, shape, and color of the ovum, however, can find it with the No. 3 lens and confirm the finding with the higher objective.

The ova are light yellow in color, translucent, symmetrically ovoid in shape, and present at the smaller end a clearly visible operculum. There is, often, a small knob on the rounded end opposite the operculum. The shell is thin and perfectly smooth so that the outline is distinct.

Several other genera of flukes produce ova which resemble somewhat those of *Clonorchis* and which might lead to difficulty in diagnosis. The most important of these are *Opisthorchis felinus*, long known as a parasite of dogs and cats in Europe and occasionally found in man; and *Heterophyes heterophyes*, a fluke which is common in Egypt, China, and Japan, and which likewise has been found in dogs and cats as well as in man.

In this country clonorchiasis has been found frequently in Chinese at the Immigration Stations on the Pacific Coast, and it is known that a small percentage of the Japanese in California harbor the parasite.

So far as I have been able to ascertain, no case of clonorchiasis has yet been reported from the New England States.

### REPORT OF CASES.

The first of our cases was in a Japanese seen at the Harvard School of Tropical Medicine early in 1922. The patient stated that he had been a student at Okayama, in southern Japan, from 1913 to 1916; that the disease is extremely prevalent in that region; that he believed he had become infested there, and that a very few ova were found in the faeces while he was in Japan in 1917. At the time the patient was seen here, the ova were so scarce as to be very difficult to find. Although much weight had been lost, the patient attributed this to change of diet while in this country. It is doubtful whether he harbored enough parasites to have affected his health materially.

A general physical examination was not made here, but the patient said that no enlargement of liver or spleen had been found in 1917. The differential blood count made here was as follows: Polymorphonuclears, 43 per cent.; small lymphocytes, 22 per cent.; transitional cells, 8 per cent.; large mononuclears, 9.5 per cent.; and eosinophiles, 17.5 per cent.

The second case, seen shortly after the first, was in a Japanese admitted for bronchitis to the U. S. Naval Hospital in Chelsea. The bronchitis passed off after a few days of fever. There was a slight recurrence and then recovery followed promptly. The patient was extremely well nourished and looked perfectly well. Neither liver nor spleen was palpable, and ova were scarce in the faeces, but a differential count made

during convalescence showed 5 per cent. of eosinophiles.

In the spring of 1922 Boston was made a port of entry for Chinese and routine examination of the faeces was instituted by Dr. A. J. Nute, of the Public Health Service, at the U. S. Immigration Station in East Boston, with the result that a number of patients were sent for observation or treatment to the Service for Tropical Diseases at the Boston City Hospital. Nearly all of these cases harbored hookworm and several other kinds of intestinal parasites as well. *Clonorchis* was found in two of the cases admitted to the hospital on May 20, 1922, and subsequently in six other cases from the same source. Dr. Nute reports that among cases examined at the Immigration Station between May 18, 1922, and May 12, 1923, 52 showed ova of *clonorchis*. All the patients were Chinese and not one of them showed enlargement of the liver, ascites or other physical evidence of the disease. The diagnosis was made only by finding the ova in centrifugized specimens of faeces. Ova were scarce in all of the cases. The same is true of the eight cases observed at the Boston City Hospital. All but one of the hospital cases showed eosinophilia of from 5 to 11 per cent. The single case having a lower count showed 2 per cent. of eosinophiles on one occasion and 4 per cent. on another. Inasmuch as all the patients harbored several kinds of parasites such as hookworm, *Ascaris*, or *Trichuris*, this observation is of little importance.

By special permission from Washington, 4 of the cases of *clonorchiasis* have been permitted to undergo treatment at the Boston City Hospital. Two of the cases were discharged some months ago as apparently cured and were so passed at the Immigration Station after a further period of observation. Several other cases are undergoing treatment.

The disease is generally regarded as incurable, but a single severe case has been reported by Brug<sup>2</sup> as having been cured by means of intravenous injections of tartar emetic.

#### SUMMARY.

*Clonorchiasis* not, apparently, having been reported previously from the New England States, a series is now recorded of 54 cases observed in Boston during the past 16 months.

Although the disease is generally regarded as incurable, a few cases in which treatment was permitted have yielded results which are distinctly encouraging. A fuller report of the cases treated will be made later.

*Acknowledgment.*—Dr. A. J. Nute, of the U. S. Public Health Service, who is in charge of the medical work at the U. S. Immigration Station at East Boston, kindly provided the information about cases diagnosed there.

Permission was accorded by Captain J. F.

Leys, Commanding Officer of the U. S. Naval Hospital, in Chelsea, to publish their case.

To these gentlemen appreciative acknowledgments are offered.

#### REFERENCES.

- 1 Gunn, H.: Jour. A. M. A., 1916, Vol. lxvii, p. 1835.
- 2 Brug: Bull. Soc. Path. Exot., 1921, Vol. xiv, p. 161.

### CHRONIC BRONCHITIS.

BY JOHN B. HAWES, 2ND, M.D., BOSTON.

RICHARD CABOT once told me that he doubted if there was any such thing as chronic bronchitis. He gave as his reasons for this statement that during the twenty years he had conducted clinico-pathological exercises at the Massachusetts General Hospital no case of chronic bronchitis had ever come to autopsy. In his opinion, chronic bronchitis was the name given to a group of symptoms caused by:

- (a) A weak heart with congestion or edema.
- (b) Bronchiectasis.
- (c) Interstitial pneumonitis.

I am unwilling to admit that because patients do not die of a given condition or because it is so located that a biopsy cannot be performed or because it cannot be demonstrated by x-ray (which would be disputed by many roentgenologists) that such a condition does not and cannot exist. I do freely admit, however, that chronic bronchitis, like "general debility," "anemia," and "run-down" is a diagnosis which in far too many instances covers ignorance and a lack of thoroughness. On the other hand, I would stoutly maintain that, just as there is an acute bronchitis, rhinitis and coryza, so there is a sub-acute and chronic bronchitis, and that this condition is not necessarily an undiagnosed bronchiectasis or the result of an unnoticed or underestimated cardiac weakness. Were I asked whether chronic bronchitis was ever a primary condition I should state most emphatically that cases of primary chronic bronchitis are rare.

There is much literature on this subject. Osler (1901 edition) considers chronic bronchitis a definite clinical entity, and even speaks of its pathology with special reference to the condition of the mucous membrane found in such cases. In the 1907 edition he says it may follow repeated attacks of acute bronchitis. He makes special mention in each edition of a form of bronchitis with which I am not familiar, found in women between the ages of 20-30 years, which may continue indefinitely without serious impairment to their health.

Lord speaks of chronic bronchitis as a symptom rather than as an independent condition.

Babcock devotes an entire chapter to this subject, evidently regarding it as a definite clinical

entity. Instead of considering the chronic bronchitis as secondary to cardiac weakness and arterial and circulatory changes, he believes that the cardiac lesions are secondary to the bronchitis and its accompanying emphysema.

Landis and Norris consider primary chronic bronchitis a rare condition and speak of "some who refuse to recognize the existence of a primary chronic bronchitis under any circumstances." Primary cases, in their opinion, comprise those due to exposure to dust such as found in millers, stone-cutters, coal miners, etc. "Cotton fever"—that condition often met with in young men who first enter the cotton business—is probably a chronic bronchitis coming in this category.

It is needless to quote further literature on the subject. It is evident from the references that I have given that chronic bronchitis is considered by many eminent authorities as a definite clinical entity, but that also there is considerable difference of opinion on the subject. The various men with whom I have discussed the subject of chronic bronchitis have as many different opinions concerning it, its etiology and classification.

Dr. Charles L. Minor rather doubts if there is such a thing as chronic bronchitis, because he does not often see it, although he would not absolutely deny its existence. As he says, if he lived in New England he doubtless would meet it oftener than in the South.

Dr. W. Jarvis Barlow believes that chronic bronchitis does exist, but that it is always a secondary affair.

Dr. Henry Christian believes that it is a definite clinical entity. He calls attention to the interesting combination so frequently met—a chronic bronchitis with emphysema.

Dr. H. R. M. Landis believes that the only primary bronchitis that he would recognize would be that due to the inhalation of inorganic dust, such as in pneumoconiosis; all other instances of so-called chronic bronchitis are secondary to other changes. He believes that, as a general rule, it would be a good thing if the general practitioner were to forget chronic bronchitis or at least to bear in mind that it is commonly the outstanding feature of a more serious ailment.

The classification of chronic bronchitis which I use is a purely clinical one, as follows:

1. Primary chronic bronchitis. In this group I would include:

(a) Cases where the bronchitis is due to some irritating substances, such as cotton, flour, or some other form of dust.

(b) Gouty bronchitis. This is a chronic cough occurring in persons of middle age, or past middle age, who are fat, plethoric, usually with a high blood pressure, and other symptoms of insufficient elimination.

2. Secondary chronic bronchitis, including:

(a) Cases in which the bronchitis is secondary to an infection in the upper respiratory tract, such as infected tonsils, sinuses, adenoids, carious teeth, etc.

(b) Chronic bronchitis following some acute pulmonary infection such as acute bronchitis, influenza, broncho-pneumonia, etc.

(c) Bronchitis following gassing in ex-service men.

3. Wrong diagnoses: A large group of cases with a chronic cough and with or without sputum which would fall in Richard Cabot's category of mistaken diagnosis, where the cough and other symptoms are due either to a weak heart, as in many elderly persons, particularly in New England, or an unrecognized bronchiectasis.

The signs and symptoms of chronic bronchitis need only be mentioned briefly:

(1) *Cough*, usually with considerable sputum, but often dry, paroxysmal and irritating, resembling whooping cough, usually worse in the winter months and especially in damp weather. Many men who were gassed are veritable human barometers and can always tell when a storm is brewing.

(2) *Sputum*. This may be abundant, often it is purely mucoid, but usually muco-purulent and occasionally consisting of almost pure pus. Organisms of all sorts may be found. Bloody mucus is frequent; actual hemorrhages of one teaspoonful or more undoubtedly do occur, but are rare.

(3) *Constitutional Signs and Symptoms*. Loss of weight, fever, and rapid pulse are not common. Shortness of breath, weakness and ease of tire, especially in gassed ex-service men, are often extreme. In many instances these symptoms in ex-service men, at least, are due to neurasthenia or a neurosis of some sort rather than to any bronchitis which may exist.

(4) *Signs in the Lungs* may be lacking or nearly so, or there may be râles of all kinds, wet and dry, coarse and fine, sibilant, sonorous, etc., usually located at the bases, usually bilateral and often associated with harsh, prolonged expiration and other signs of emphysema. Dulness and other voice and breath changes are usually lacking.

Now let us consider more in detail the various groups of cases as classified above.

1. Primary chronic bronchitis.

(a) There is very little to be said concerning the first sub-heading of this group—chronic bronchitis due to some form of dust or irritating substance. Treatment naturally consists of the removal of the cause.

(b) Gouty bronchitis. This form of primary bronchitis is to me of distinct interest although some of my friends doubt its existence. This condition usually occurs in men and women

past middle age. There is usually persistent cough which continues month after month regardless of wind or weather. To use automobile parlance, "their cylinders are carbonized and there is sand in their carburetors." They are apt to be red-faced, plethoric, overweight, with an increased systolic blood pressure, often with albumen in the urine. The cough is hard and dry; râles, usually dry squeaks and wheezes, are present at both bases, often accompanied by signs of emphysema. X-ray examination often shows a somewhat enlarged heart along with what roentgenologists call peribronchial thickening.

Treatment consists of depletion and elimination. The total amount of food taken should be reduced at least one-third. Meat should be prohibited except once or twice a week, and salt, condiments and meat extractives should be reduced to the minimum. The patient should drink 10-12 glasses of water daily and should keep the bowels open by means of a saline laxative. Iodide of potash taken regularly for the first two or three weeks, then every other week until finally it is taken one week out of every month, is of distinct benefit. Oil sprays or, occasionally, steam inhalations, are of great help in alleviating the paroxysms of cough. Exercise, such as walking, riding or golf, is a most important factor. With this type of bronchitis, as indeed for most cases of chronic bronchitis, cold air at night should be avoided and the thermometer in the bedroom should not be allowed to go below 45°, or better still, 50°. These patients will often show a wonderful improvement on such a regimen as this.

## 2. Secondary chronic bronchitis.

(a) The first group consists of cases in which the bronchitis is due to an infection higher up. Signs in the lungs are usually as above mentioned with the addition of a few cases where signs such as dullness, râles, etc., closely simulating an early tuberculosis are present at one or both apices. French observers have done a real service in calling attention to this group which still needs further investigation and study, however. Treatment of these patients naturally consists in removing the source of infection higher up. All other treatment is purely temporary and palliative.

(b) Chronic bronchitis following some acute pulmonary infection such as influenza. I am one of those who firmly believe that just as there is post-influenzal depression, of which I have had a vivid personal experience, there is also a post-influenzal bronchitis.

Such patients are apt to be in poor physical condition. Most of them have taken cough mixtures of all sorts and varieties and are generally discouraged and disgusted with life. What they need most of all is encouragement, iron, rest, and particularly a change. By sending

them away for a time, even if only a short distance, where climate cannot possibly be a factor, but where business and housekeeping cares are left behind and where they can rest mentally as well as physically, wonderful improvement often takes place in a surprisingly brief period.

(c) Chronic bronchitis following gassing. I have never seen any acute gas cases, but I have seen hundreds of men who at least attribute their present symptoms—cough, sputum, often bloody, and associated with frank hemorrhages, pain, constriction in the chest, shortness of breath and general weakness—to the effects of the gas. I quite agree with Dr. Cabot in his suggestion that the pathology of many of these gas cases may be an interstitial pneumonitis and occasionally a bronchiectasis. In the great majority, however, bronchiectasis can be definitely ruled out. As far as interstitial pneumonitis is concerned, I and the x-ray men with whom I have talked at first were convinced that there was a definite increase of fibrous tissue in the lungs of men who were badly gassed. Recently I have come to doubt this so that I admit freely, and I believe roentgenologists will agree with me, that I do not know what pathological changes gas causes in the lungs. Often there is considerable peribronchial thickening, especially toward the bases, distinctly more than normal, but I am unwilling to call this an interstitial pneumonitis.

These gassed men, as everyone knows who has dealt with them, are extremely difficult propositions. Most of them at one time or another have been labelled as "Tb. suspects" or actual consumptives, which has certainly done them no good. At least they can be relieved of this burden. Many are nervous and apprehensive and need a frank, encouraging talk with words of hope and cheer more than anything else; many of them need a severe and even brutal talking-to and to be urged to go to work. They are often helped by doses of iodide of potash, occasionally with addition of belladonna, if expectoration is profuse. Large amounts of water up to 8-10 glasses daily and free movements of the bowels should be insisted upon. Wind and dust and cold air at night are especially harmful. With many of these men, as with other cases of chronic bronchitis, coughing has become a habit which must be broken up. In this bromides are often of great value providing it is carefully explained to the patient what the medicine is for and that it is purely a temporary measure.

3. Wrong diagnoses. This last group, which is not bronchitis at all, includes those patients with a chronic cough due to some other cause, such as a weak heart, bronchiectasis, interstitial pneumonitis, or others such as an undiscovered tuberculosis, syphilis, malignant disease, asthma, enlarged bronchial glands or a multitude of other causes. Treatment consists in finding



the cause, its removal if possible, and if not, instituting proper treatment.

I have not included asthmatic bronchitis in this discussion. This interesting condition is too closely allied to true bronchial asthma to be classified as a type of chronic bronchitis. Likewise, in the treatment of chronic bronchitis I have made no mention of the use of vaccines. In my opinion, they are rarely, if ever, of value. In far too many instances the physician at once prepares an autogenous vaccine or more often uses a commercial preparation and gives the patient a series of injections instead of trying to trace down the bronchitis to its source and removing the cause. I regard the use of vaccines in chronic bronchitis as distinctly a last resort measure.

I would summarize my ideas on this subject as follows:

I. I believe that chronic bronchitis is a definite clinical entity, occasionally primary but usually secondary to something else.

II. Congestion following a weak heart, bronchiectasis, chronic interstitial pneumonitis are often mistakenly called chronic bronchitis.

III. Chronic bronchitis may be classified as follows:

1. Primary Chronic Bronchitis. Due to:

(a) Dust or other irritating substances.

(b) Gouty bronchitis.

2. Secondary Chronic Bronchitis. Due to:

(a) Chronic infection of the upper respiratory tract.

(b) Acute pulmonary infection.

(c) Gassing.

3. Mistaken Diagnoses.

IV. Treatment depends on finding the cause, removing it if possible, or giving proper treatment.

V. Asthmatic bronchitis is a form of asthma and not a true chronic bronchitis.

VI. Vaccine treatment should be looked upon as a last resort measure. It should never supplant or replace other therapeutic measures and should be used only after a detailed search for other causes of chronic cough has been made without avail. The chief requisite in the use of vaccines is to see that they do no harm.

#### OBSERVATIONS ON ANESTHESIA, WITH A REPORT OF 1500 CONSECUTIVE CASES.

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PREVENTIVE medicine in this age of experimentation and enlightenment has come to take its place among the most important sciences of

the decade. Physicians are aiming not only at rendering life more comfortable by eliminating disease, but to promote longevity beyond the three score and ten spoken of in the Bible.

Along with other advancements arrived at in our efforts to alleviate suffering, inhalation anesthesia has developed; and with the discovery of the various anesthetics and methods of administration, humanity has been granted a blessing the magnitude of whose results has never been fully appreciated. For in truth, it is to the discovery and perfection of anesthesia that modern surgery owes its remarkable development in the last half century. And now after a long struggle anesthesia has emerged from the hands of the untrained and has become recognized as a distinct specialty in medicine.

The patient demands that nothing be left undone which will safeguard his life and ameliorate his suffering, and it is the duty of the anesthetist to grant this demand, and the way to do it is to consider every case not as an appendix or gall-bladder but as a living personality entrusted into our hands for rendering it temporarily unconscious and insensitive to pain. In doing this we must first of all be competent and well trained for the task and responsibility that falls upon us; secondly we must employ the modern methods which tend to lessen suffering and diminish the danger to loss of life or future health.

To apply the principle of preventive medicine to surgery demands a consideration of the individual back of the appendix or gall-bladder. The first item in this consideration is a thorough physical examination, without which no patient should be put under the influence of an anesthetic. The second is the choice of anesthetic, which is an important factor in the consideration of the patient's welfare.

While the surgeon may have his point of view in regard to a given operation and the medical man may have his in regard to the patient who is to undergo this operation, the anesthetist should constitute a connecting link between the two and be able to form an opinion as to the probable outcome. In other words, the anesthetist must be well trained in medical diagnosis and should be familiar with the effects of different operations on healthy individuals and with their effects on patients suffering from various medical ailments.

Imbued with a spirit of thoroughness in every detail, I have kept accurate records of fifteen hundred anesthetics for major operations which I administered at the Beth Israel Hospital, and I am here ready to report on the different experiences during operations and the complications that followed. Also on the various conclusions which I arrived at as a result of my observations.

Of the fifteen hundred anesthetics one hun-

dred and seventy-eight were plain ether. Nine hundred and eighty were gas-oxygen induction followed by ether. Two hundred and twenty-two were gas-oxygen aided in some cases with a whiff of ether for temporary complete relaxation. Eight cases consisted of pure chloroform all through operation. Twenty were cases of chloroform induction followed by ether. There were twelve cases of ethyl chloride and eighty of spinal analgesia.

#### PRELIMINARY MEDICATION.

Most of my patients received from 1/8 to 1/4 grain of morphin and 1/200 to 1/100 of atropin half an hour before operation. A patient weighing 150 pounds was given 1/4 grain of morphin and 1/100 of atropin. Between 100 and 150 pounds 1/6 and 1/150 was given. If the patient's weight was below 100 pounds he received only 1/8 and 1/200. Children below thirteen years of age received no morphin but in some cases were given 1/300 of atropin in order to abort the excessive secretion of mucus in the throat. In the aged and infirm I found no preliminary medication necessary on account of the fact that these people are not so apprehensive and do not fear the anesthetic and operation as much as the young adult. This sort of patient takes the anesthetic better and there is less difficulty in keeping them relaxed. Patients suffering from anemia due to loss of blood require very little, if any, morphin; I have found a great susceptibility in exsanguinated patients to the ordinary dose. Very sick and septic patients need not have any preliminary medication, for the weakened and toxic condition serves the purpose of the morphin. Women in labor about to be anesthetized do not require preliminary medication. After having suffered for a considerable time these patients clamor for something that will give them relief.

It is my opinion that no preliminary medication should be given to any patient unless an interval of at least half an hour will be allowed to intervene between the injection and the beginning of the operation. Morphin and atropin given immediately before operation often cause disturbance in the rhythm of respiration. Anybody watching the effect of a hypodermic of morphin given to an individual for the relief of pain will realize the possible havoc it may cause when its effects are suddenly thrust upon an unconscious etherized patient subjected to the strain of an operation. It is better to leave the preliminary medication out rather than administer it immediately before the anesthesia starts.

I consider it unnecessary to administer preliminary medication when chloroform is to be the anesthetic. On account of the powerful action of this agent and the possible danger it carries with it, it is best that no other drug is

mixed with it. In gas-oxygen, however, larger doses of morphin should be given than ordinarily required for ether anesthesia.

From what I have said before you will realize that I feel that the practice in hospitals of having a standing order of morphin and atropin applied uniformly to all patients is bad judgment and should be condemned by experienced anesthesiologists.

#### ETHER.

Ether, by far the safest and most efficient anesthetic in general use, is not entirely devoid of danger, which is mostly associated with the respiratory tract. Of all the different methods used to get the ether into the circulation the open method is the best and simplest, and, unless the operation is within the oral or nasal cavity, there is no good reason for using any other method. Once in a while the closed cone has to be substituted for the open one. This is especially true in children, healthy young males, and in alcoholics who need a greater concentration of ether for complete relaxation.

In the nitrous oxide and oxygen combination for induction as a preliminary to ether anesthesia we have a valuable addition tending to alleviate the patient's suffering. For ether, while being one of the best agents for the maintenance period of anesthesia, is to my mind one of the poorest for the induction period. The excitement, nausea and vomiting, rigidity, cyanosis and struggling, which are some of the physiological aspects of the action of ether in some circumstances, cannot always be overcome even by the most experienced anesthetist. In gas-oxygen, on the other hand, we possess an agent which acts very quickly, giving a short induction period characterized by the absence of these difficulties. The apparatus which allows ether to be delivered by the drop method at the same time that the gas-oxygen is being administered has proved most satisfactory in my hands.

There seems to be a difference of opinion regarding the depth of anesthesia, some believing that an anesthesia at the shallow level tends to allow shock more readily than one at the deeper level, and, therefore, advocating a deep anesthesia for all serious abdominal operations. I cannot agree with the latter viewpoint. My idea is that a deep anesthesia, especially if kept up for a long time, is more apt to cause shock than a light one. The trauma of the operation remaining the same, no matter how deep the anesthesia, the excess of ether is only an additional burden on the patient's heart, lungs and kidneys which tends to weaken these organs and cause shock.

Furthermore, there are advantages in a light anesthesia. In the first place the patient usually vomits on the operating table soon after the anesthesia is stopped. The anesthetist is still at his side to help him along, and with all the

mucus and saliva cleared out of the throat there is less danger of the patient allowing any of it to escape into the larynx, causing pulmonary complications, which are so common in ether anesthesia.

I believe in using as little of an anesthetic as possible, keeping the patient lightly under its influence and only temporarily increasing the depth with every step of the operation which is likely to be accompanied by much trauma or which may require extreme relaxation. And this corresponds with the feeling of those who advocate that the anesthetist should not be shut out from viewing the operation. For the behavior of the patient, together with the progress of the operation, should be the guide-posts throughout the conduct of the anesthesia.

The only objection to a light anesthesia is that the patient may start to gag in the middle of an operation. But the experienced anesthetist can always forestall this by noticing in advance from the character of the patient's respiration that he is coming out of the ether, and by gradually increasing the concentration of the ether and shutting off the admission of air, he will succeed in aborting vomiting or gagging. This, however, should happen very rarely with the competent anesthetist.

I consider close watchfulness of the patient's respiration of such great importance that I cannot let it pass without a few words. The trained anesthetist will always be able to sum up his patient's condition from the respiration alone. By the character of the respiration he will be able to distinguish a light anesthesia from a deep one, the approach of wakefulness or cessation of respiration, nasal obstruction or relaxed backward dropping tongue, the presence of asthma or bronchitis, the clogging of the bronchial tubes with mucus secretion, the influence of morphin, too much trauma or dilatation of a sphincter muscle by the operator. These are some of the most important conditions which can be ascertained from the respiration alone.

The airway tube is a great aid in troublesome respiration of the obstructive type. Since its introduction I have done away entirely with the nasal tube. One is never sure of being able to pass a nasal tube into the pharynx, and sometimes it is done only at the expense of starting up a nasal hemorrhage. Furthermore, the nasal tube easily clogs up with mucus, and it may serve as a means of introducing infected nasal material into the lungs. With the airway tube these dangers are eliminated.

There is sometimes encountered a condition of troublesome respiration which is entirely due to the severity of the operation. In some cases you can aid this condition by the addition of more ether. But occasionally there is a patient who cannot very well stand the further addition of ether and shows it by a complete ces-

sation of respiration, cyanosis, and dilated pupils. In such cases I consider ether inadequate as an anesthetic for the extremely severe operation. Chloroform would perhaps serve the purpose to greater advantage but it is dangerous to change off at this time. It is, therefore, necessary for both operator and anesthetist to adapt themselves to the patient's needs and safety rather than try and mould the patient to their own requirements. Sometimes when the surgeon manipulates in the region of the diaphragm the patient's respiration may become irregular. There is no way of helping this condition until work in that region ceases.

With a large amount of mucus in the throat and pharynx, which hinders the patient's respiration and also serves as a source of danger for an aspiration pneumonia, I consider it necessary for the anesthetist to aspirate when possible and if not, to choose a favorable moment in the middle of the operation and let the patient come out of the ether to a point where he will start to gag and vomit. After the respiratory tract is completely cleared one can easily and swiftly get the patient back to the deeper narcosis which may be required for the continuance of the operation. It is needless to say that this should not be attempted without informing the operator of what is intended.

There is one complication which the respiration alone will not disclose and that is the condition of impending shock. A patient may keep up a normal respiration in spite of the fact that he is approaching a condition of shock. In this case all the other signs of anesthesia must be taken into consideration. The pulse and color will sometimes tell in advance that the patient is standing the operation poorly, but of still greater importance is a record of the patient's blood pressure at frequent intervals during the operation. This will warn of imminent danger if nothing else will.

All of the other signs of anesthesia, although secondary in their importance when compared with the respiration sign, should not be entirely neglected. The patient's color, his pulse rate, and the degree of dilation of his pupils should always be the concern of the anesthetist. The pulse is the best guide in chloroform anesthesia, the color in nitrous oxide oxygen anesthesia, just as the respiration is under ether.

#### GAS-OXYGEN.

Of late the profession has taken a swing towards gas-oxygen in preference to ether. This is mainly due to two factors: the perfection of apparatus, and the development of the specialty of anesthesia making more trained anesthetists available for this special work. That gas-oxygen is much safer than ether is beyond dispute. Its action is quick and pleasant; but complete loss of consciousness and complete relaxa-

tion cannot always be obtained. This can often be remedied by adding ether in small amounts during the progress of the operation. Occasional patients resist even this procedure unless ether is used in large amounts, so that in such cases a straight ether anesthetic might profitably be employed.

I consider gas-oxygen the anesthetic of choice in all minor operations. This list should include curettage, ischio-rectal and breast abscesses, and reduction of some fractures and dislocations. In obstetrics it is of great value in deadening the pains in so much as it does not arrest uterine contractions. And by changing to pure oxygen the minute the baby is born, the prompt oxygenation of mother and child is immediately accomplished.

Gas-oxygen should be used in all major operations where the patient is afflicted with chronic bronchitis, asthma, tuberculosis, diabetes, nephritis, and septicemia. In acute infections of the respiratory tract ether is extremely dangerous and should always be replaced by gas-oxygen.

In using nitrous oxide-oxygen the surgeon should not begin the operation as soon as consciousness is lost. The blood must first become completely saturated with the anesthetic before there is loss of sensation to pain with relaxation. Once in a while a patient moans or even stirs during the operation, yet when he wakes up he has no recollection of having experienced any pain. They usually dream while asleep about the thing in mind just before they go under the anesthetic. Thus, a woman wakes up telling that she dreamed about her children, a man about some business transaction. A doctor to whom I administered gas-oxygen for a minor operation dreamed that he made the three visits for which he was summoned just before the operation.

#### CHLOROFORM.

Chloroform is a smooth inducing agent of rapid action and free of excitement, a wonderful relaxant, giving a comparatively brief recovery without after-effects. But it is an extremely dangerous drug from its immediate depressing effect on the circulation, and its remote effects on the liver and kidneys, in which it causes protoplasmic degeneration. For this reason its use must be restricted to a few picked cases. There are rare conditions where chloroform has to be used in preference to any other anesthetic and on this account it cannot entirely be eliminated from the field of anesthesia. I have a special dread of chloroform and am as careful as I possibly can be when I am called upon to administer it. Yet out of a total of twenty-eight cases two mishaps occurred with the use of this drug. Neither of these was a fatality, but the patients were pulseless and cyanotic, and temporarily near death. Both of these accidents occurred

during the induction period when the danger of chloroform seems to be most marked.

To illustrate this danger I will relate one case in brief. A young, slightly built woman of 29 who had bled considerably from a miscarriage was to be curetted. She expressed a great aversion to ether, which she had taken at some previous time. As it happened I had no gas available, and I decided to use chloroform for induction. In about one minute the patient was asleep, after a very small dose of chloroform, perhaps not more than one drachm. I switched over to ether by the drop method, and after about two more minutes elapsed I noticed that the patient's face was assuming a pale bluish color, most marked in the lips. The pulse was found to be imperceptible at the wrist although respiration appeared to be normal; gradually this, too, became shallow with a few short inspirations and stopped. I immediately lowered the patient's head and chest over the edge of the table, started artificial respiration, and gave her 15 minims of ether subcutaneously together with an ampule of camphor in oil. She soon began to breathe again and the pulse became perceptible. In about half a minute the color and respiration were almost normal and the pulse of fair quality. The operation was completed and the patient had an uneventful convalescence.

In this case the chloroform, although slight in amount, yet was enough to overwhelm a heart extremely weakened from loss of blood. Other physicians who have used chloroform at one time or another have reported similar experiences, in some cases even more hazardous than mine.

I consider it, therefore, unjustifiable to use chloroform in any case where gas-oxygen or spinal analgesia can well take its place. The practice of using chloroform as an inducing agent should not be advocated, for if the anesthetist is properly equipped he will prefer nitrous oxygen for the purpose. If the anesthetist is not well trained he should beware of chloroform.

Once in a while a case will occur where chloroform has to be resorted to because all other anesthetics are impracticable, as shown in the following case. A young man entered the hospital with the history that one week before he contracted tonsillitis. He was quite ill for three days; then a swelling appeared in the region of the left tonsil extending to the outside of the neck below the angle of the lower jaw. He was unable to open his mouth, had the sensation of pressure in his throat and could not swallow even liquids. Two attempts were made to open what appeared to be a peritonsillar abscess but no pus was reached and the patient was not relieved. The swelling increased and the patient began to have choking spells accompanied by



gasping and cyanosis. Several times he turned blue and stopped breathing.

At the hospital the surgeon decided to drain the abscess through an incision under the angle of the jaw. Local anesthesia was impracticable on account of the sepsis and the depth of abscess. Ether was out of the question, for one spasm of coughing would have caused the patient to choke to death. Gas-oxygen was rejected on account of the rigidity of the muscles of the neck which is so common with this anesthetic. I chose chloroform on account of its relaxing qualities and the absence of excitement and rigidity and it proved most successful. The patient went under swiftly; his color improved, for the relaxing effect of the chloroform gave him a chance to breathe better than before. An incision was made through the neck and the pus cavity reached and drained with immediate relief to the patient.

In giving chloroform one should use a mask carrying about six layers of gauze and should keep it at a distance of about half an inch from the face. The drug should be administered by a very slow drop, allowing the chloroform to evaporate rather than to soak the mask. I always insist on having a fresh container newly opened for each anesthesia.

#### ETHYL CHLORIDE.

This drug I have used chiefly for minor operations such as opening up of abscesses and ear drums. Although this is a dangerous anesthetic yet in the twelve cases in which I have used it, it gave satisfaction.

I shall not dwell on spinal analgesia at the present time, for on this subject I am preparing a separate paper.

#### COMPLICATIONS.

By far the most important complications are those referred to the respiratory tract. Aside from a few cases of bronchitis which were manifested by cough and slight elevation of temperature lasting for two or three days following operation, I had in my series twenty-one serious lung conditions. Two were lung abscesses, one of which proved to be of tubercular origin; five were broncho-pneumonia; one was a typical case of pulmonary embolism with infarcts in the lung. The rest were all lobar pneumonia. Of these twenty-one, three died. As a rule pneumonia following operation is mild and lasts but four or five days. It is possible that many of the pneumonias are embolic in origin, but where the pneumonia develops gradually there is no way of distinguishing. The one case of pulmonary embolus was so characteristic that I will report it.

A woman of 29, in the best of health, was operated upon for a chronic appendix. The anes-

thesia was very smooth, with preliminary morphin and atropin and gas-oxygen induction. The operation lasted about half an hour and was accompanied by very little trauma. In the middle of the night, about eighteen hours after the operation, the patient suddenly complained of a distressed feeling, weakness, dyspnoea, and a sharp pain in the region of the left scapula. Upon examination the next morning she showed distinct cyanosis, extreme prostration, embarrassed respiration, a slightly dilated heart, distressing cough, dulness and bronchial breathing over left upper lobe of the lung. The temperature was 101, pulse 140, and respiration 52. The patient was coughing up mucus streaked with blood. Under suitable treatment the condition gradually improved; the dulness and bronchial breathing disappeared in a few days, and the patient went on to complete recovery. This picture could suggest nothing else than an embolus causing an infarct in the upper left lobe, which cleared up quickly after the circulation was re-established.

It is sometimes very difficult to tell from the physical examination alone a pulmonary embolus from a pneumonia since both give the same signs and symptoms. The only difference is that pulmonary embolism is apt to occur within the first twenty-four hours after the operation, is sudden in onset, the respiration is much more embarrassed and rapid, and there is more cyanosis and pain. Pulmonary embolus may occur also at any time after the operation, as in one case of my series where a young man operated for inguinal hernia died suddenly of pulmonary embolus eight days after operation when he was apparently having a normal recovery.

Lung abscess is more apt to occur in cases of aspiration of infected material through the larynx into the bronchial tubes. A lung abscess is not so easy to discover and it takes a couple of weeks of vague lung symptoms before the diagnosis can be definitely established. The x-ray is of great aid.

I consider it unjust to the anesthetist to attribute these complications entirely to the anesthesia. The fact alone that sixteen out of the twenty-one lung complications occurred in patients operated in the upper abdominal cavity, would indicate that other factors besides the anesthesia have to be taken into consideration. The presence of wicks and drainage tubes in proximity to the diaphragm tends to inhibit the patient's respiration; this results in poor aeration of the lungs, which creates a susceptibility to pneumonia. Also, on account of pain in the region of the operation, the patient refrains from coughing, which is the only means of clearing the bronchial tubes. In this way the tendency to pneumonia is greatly increased. There are still other causes independent of the anesthesia, such

as preëxisting undiscovered lung conditions, chilling of the patient during and after operation, emboli reaching the lung from the seat of the operation, and escape of blood and infected material into the larger bronchi in nose and throat operations. These are causes over which the anesthetist has no control and which he cannot prevent.

There is, however, no question in my mind that a great number of complications are directly due to the anesthetic and that with great care and foresight the occurrence of these complications can be materially reduced. Inquiry into the patient's history and a thorough physical examination are two efficient methods with which to combat post-anesthetic complications. An old tubercular process or evidence of a chronic cough cannot always be discovered from the examination alone, but a condition such as diabetes, high blood pressure, or endocarditis can be readily discovered from examination of the patient. It is, therefore, imperative that both history and physical examination be given due consideration by the anesthetist. In many cases the operation can be postponed, if advisable, and when this is not feasible an anesthetic other than ether can be chosen. It is the anesthetist's duty to see that the patient is protected from draughts while in the operating room and that he is well covered and dried before leaving it.

It is noteworthy that, in spite of the fact that a large number of the patients to whom I administered gas oxygen were suffering from one condition or another, among which lung troubles predominated, not a single case of pneumonia or other complication resulted except where patients died from the cause for which they were operated. One case of broncho-pneumonia occurred in an old woman following spinal anesthesia.

I had fifty-seven cases of mitral regurgitation and nine cases of mitral stenosis and regurgitation which went through major operations with ether and gas-oxygen induction; none of these had any serious complications. This proves that a heart with a valvular lesion but well compensated will not be much affected by ether. On the other hand, cases with myocardial degeneration stand ether anesthesia poorly. They are easily thrown into shock and may die of an acute dilation of the heart even several days after the operation.

All my diabetic cases, twenty-one in number, were first kept in bed on a diet until rendered sugar free. They were operated under gas oxygen or spinal, and except for one who died of septicemia which existed before operation, all got well. In acute cases, where the operation cannot be postponed, the diet should be regulated after the operation.

High blood pressure cases were kept in bed

and treated by elimination for a number of days before operation. It is remarkable what marked drops in pressure we obtained by this method and how well they stood the operation.

The greatest danger lies in recent acute infection of the respiratory tract. In such cases operation should always be postponed when possible. If this cannot be done, beware of giving ether; gas-oxygen, spinal or local, should be the choice.

Of eleven cases with chronic nephritis one patient, with only one kidney, died of uremia.

Of two cases with acute nephritis, both operated for ruptured appendices under gas-oxygen, one died of uremia.

#### SHOCK.

*Surgical shock*, so called, is caused by the operation and not by the anesthesia. Some cases of spinal anesthesia develop a type of shock which usually clears up readily and is hardly ever fatal. Shock is usually associated with long and severe procedures, accompanied by considerable hemorrhage during or immediately after the operation. Four of my series ( $\frac{1}{4}$  of 1 per cent.) died of shock; in three of these hemorrhage was a factor, while in the fourth myocarditis was the cause. The approach of shock can be discovered only by keeping a blood pressure chart, and I consider it part of the anesthetist's duty to have the blood pressure recorded at least every fifteen minutes in every severe and prolonged operation. Since pituitrin and adrenalin are of great value in combating shock, as is the administration of normal saline intravenously, it is necessary to recognize the condition so that these drugs may be administered early enough to be of aid.

#### END-RESULT STUDY OF DERMATOLOGICAL CASES TREATED BY ROENTGEN RAYS.\*

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In the treatment of skin diseases by x-ray the advance in construction of apparatus and improvements in technic in the past six or eight years have made it possible not only to prescribe, but to administer with a great degree of accuracy a predetermined dose of x-rays by the control of four factors, namely, voltage, milliamperage, distance, and time. The same formula

\*Read at the Massachusetts General Out-Patient Staff meeting on April 25, 1923.

la, that is, the same combination of these factors, will not necessarily apply to every apparatus. It is, therefore, necessary to standardize the individual x-ray outfit, either by some one of the usual physical methods of measurement, or biologically, by ascertaining the combination of factors necessary to produce an erythema on the normal skin. For this purpose a blonde skin and a flexor surface are usually selected in order to obtain as a unit of measurement an erythema dose which will not produce untoward effects upon a sensitive skin. With the knowledge of these factors thus obtained we can treat cases of skin disease much more accurately, with greater safety to the patient, certainly with more assurance to ourselves, and obtain better results.

By varying these factors the action of the rays can be regulated to produce at will an effect ranging from one of possible stimulation to one of partial or complete inhibition, and to one of destruction of tissue. Fundamentally, the action is not known. It is thought the change produced by the rays is an atomic one, perhaps in the nature of ionization, but it is not possible to be certain whether this is due to some change produced in the lecithin, in the chromatin, or in the enzymes of the cell. Clinically, however, by a variation in the dosage we know that x-ray can be used to relieve itching, to lessen the secretions, to hasten the absorption of cellular infiltrations, to inhibit cell growth, to inhibit hair growth, or to cause complete destruction of tissue.

The risks from the use of x-ray with modern apparatus and modern technic are comparatively slight. The majority of cases with untoward results I believe can be laid to an error in technic somewhere along the line. No doubt there are cases of sensitiveness to radiation in the same way that there are cases of sensitiveness to a drug or other agents, but I believe that they are comparatively few. In this connection I wish to reiterate the necessity for accuracy in the use of all four factors which regulate the dose. As an argument for accuracy, if any is needed, let me remind you of the results of overdosage. Most of us are familiar with the erythema, the vesiculation, the ulceration which may be produced, and also with the long convalescence and the scarring, with the consequent atrophy, telangiectases and pigmentation which may follow.

As far as the technic is concerned I will simply state that these cases have been treated with a voltage sufficient to bridge a 6-inch gap between points, 3 milliamperes, and a varying time and distance to produce the required dose. In the matter of protection of the patient, in those cases in which a fraction of the dose required to produce an erythema has been used for a series of treatments, the only pro-

tection has been the covering of the hair of the scalp, eye-brows and eye-lids, and covering of the pelvic and pubic regions with lead or lead rubber. In those cases in which a more intensive treatment has been given there has been careful shielding with the same materials of all the skin except the exact area of the disease to be treated.

In regard to the results of x-ray treatment in skin diseases, MacKee, Hazen and Highman have all stated that x-rays today are the most important single agency which we have in the treatment of skin diseases. To illustrate their value and also to give an idea of the work which has been done in this hospital I have recently reviewed the cases which were treated here for the first time in 1920 and 1921. I have examined the records of these cases this year, so that at least one year has elapsed after the case was first treated in the x-ray department. It is only fair to state that during these two years there was considerable change in the equipment of the x-ray room and that it was necessary to standardize four different machines at different times. This has added to the difficulties of the work and has undoubtedly tended to prevent the full benefit of x-ray treatment.

During these two years in question there have been referred to the x-ray room for treatment, upon the days on which the skin cases have been treated, 252 cases: 101 in 1920, and 151 in 1921. There were 40 of these individuals who appeared for only one treatment, or about whom information is too meager to give definite results, and they are, therefore, not included in the following brief summary of the results obtained.

For convenience I have divided these cases into four groups: (1) Cases to which a fraction of an erythema dose has been given, usually one-eighth to one-third of an erythema dose, at weekly intervals, and for from six to sixteen treatments.

(2) The cases to which an epilating dose has been given, only one treatment being given in these cases.

(3) The cases to which treatment is given with the use of a filter, usually one millimeter of aluminum, these treatments being repeated at three to four week intervals.

(4) The cases to which a destructive dose of x-ray is given.

#### I. DISEASES TREATED BY FRACTIONAL DOSAGE.

*Acne Vulgaris*—12 cases. The duration in these cases varied from one to six years. There were four cases with acne of the back, and eight with acne of the face. The number of treatments varied from four to fifteen. Eleven of these cases are practically well. By this I mean that they have had only one or two lesions oc-

asionally. In some of the cases the improvement was very striking. The one case not improved was a very obstinate case with lesions on either side of the back of the neck.

*Eczema*—14 cases. These included both the generalized cases and the cases with more or less localized eruption. All of these cases showed some improvement. Ten showed very marked improvement, these latter including practically all of the localized type. In the majority of these cases the itching became less, the infiltration decreased, and the redness faded out. The generalized cases did not do so well.

There were, in addition to these cases, five cases of a sharply localized eczema, usually on the neck of women—so-called neurodermite—which responded extremely well to comparatively few treatments of x-ray. Where the areas involved the scalp they were more obstinate to treatment. Relief in this type of disease is usually obtained very promptly.

*Sycosis*—13 cases. The duration in these cases varied from one to seven years. Much to my surprise I found that ten of these cases had received a marked improvement. I had not realized that so many of these cases had responded so well. Five of them were sufficiently improved to be classed as well, and there was one other case which was discharged as well who returned about a year later with a recurrence which did not respond at all to x-ray treatment.

*Psoriasis*—3 cases. In only one of these cases was any relief obtained. This was a case with unmistakable lesions in which only the hands were treated. The lesions disappeared coincidentally with four fractional treatments. Recurrence appeared nine or ten months later and was as promptly relieved by four treatments.

*Chronic Urticaria*—5 cases. Treatment of this condition has been distinctly unsatisfactory. In only one case was any relief obtained. After three treatments to the anterior and posterior surface of the body, coincident with four treatments, the condition improved and when seen again several months after had only occasional slight itching.

*Pruritus*—38 cases. This includes the generalized variety, very frequently of unknown origin, as well as cases of localized itching of the anal, perineal and vulval regions. Sixteen of the cases showed marked improvement, and these included almost entirely the localized type of itching. The general type of itching very frequently failed to respond in any way to x-ray treatment.

*Mycosis Fungoides*—3 cases. I mention this disease because it is one of the diseases in which the x-ray furnishes the only method of relief. The disease is characterized by marked itching, the appearance of scaly red patches which eventually become nodules and break down. The individual usually succumbs to this disease.

One of these cases was controlled for a short period with x-ray but eventually failed to respond to treatment. The other two cases, after a year and a half, have shown no recurrence.

## II. CASES TO WHICH AN EPILATING DOSE WAS GIVEN.

*Ringworm*—66 cases. Ringworm of the scalp furnishes the best test of the standardization of the x-ray apparatus and of the technic, for the reason that too little x-ray fails to epilate and get rid of the disease, and too much produces permanent epilation with the consequent scarring and telangiectases. X-ray is the best method for the treatment of ringworm of the scalp because it gets rid of the infecting material quickly and also allows the children to get back to school sooner than by any other method. For example, they can usually return to school in six or eight weeks after treatment instead of waiting from ten to eighteen months with the usual forms of treatment.

It is advisable to treat the whole scalp for this infection. The reason for this is shown by the fact that the five cases in this group which recurred occurred among those cases in which only certain areas were epilated and not the whole scalp. These cases were subsequently treated again and the disease cured. In all of the cases a good regrowth was obtained. Nineteen of the cases occurred in a ringworm epidemic in one school near Boston.

The action of the x-ray in this disease is entirely mechanical. It produces an inhibition of hair growth, the hair, which is the food supply of the fungus, falling out in from seventeen to twenty-one days, carrying with it the fungus. So far as we know, the x-ray has no action on the fungus itself. Regrowth occurs in from three to four months.

These cases are now followed up by a nurse and a strict check is kept on all the cases until they are returned to school and until growth has taken place.

*Favus*—6 cases. This form of disease of the scalp is more resistant than the ordinary ringworm. This is shown by the fact that four of the cases required two epilations at different periods in order to obtain a cure, and even after this, one needed a manual epilation in order to be free from the disease. The other two were cured with one epilation.

## III. CASES IN WHICH FILTERED TREATMENT IS USED.

*Keloid*—5 cases. Two of these showed only a moderate improvement. The more recent the keloid and the faster it is growing, the better it responds to radiation. A good many treatments are required, and a dosage nearly equal to an erythema dose, given through one milli-



meter of aluminum, has been employed in these cases.

*Lupus Vulgaris*—5 cases. None of these cases have shown improvement. I believe that the x-ray treatment of this disease is limited to the cases which are comparatively recent, in which there is little scarring, and which have had only a little treatment.

*Tuberculosis*—2 cases. These were two cases of serofuloderma which did well with treatment and at last reports were healed.

#### IV. CASES IN WHICH A DESTRUCTIVE DOSE IS USED.

*Epithelioma* and *Keratosis*—14 cases. The majority of these cases occurred on the face although there was one on the hand and one on the arm. One patient became worse, while two cases showed recurrence of nodules and had subsequent treatments. The other eleven cases are well. In these cases a dosage amounting to one and a half or two times an erythema dose, unfiltered, has been used and treatments given at from three to four week intervals.

The other twenty-eight cases are distributed among fifteen different diagnoses and examination of these shows that x-ray has produced good results in some cases of warts, in certain cases of fungus infection of the hand, in excessive sweating, in certain types of lichen planus, and in blastomycosis.

This brief survey of the end-results obtained by the x-ray treatment of various dermatoses in our x-ray department indicates that x-ray is essential in the treatment of ringworm, favus, epithelioma, keratosis, and mycosis fungoides; that it is often the method of choice in acne, eczema, sycosis vulgaris, pruritus, keloid, and certain forms of tuberculosis of the skin. In addition, it may often be of great value in the treatment of some cases of the following diseases: psoriasis, lichen planus, warts, fungus infections of the hand, excessive perspiration, and blastomycosis.

### REPORT OF FIVE CASES OF ACUTE ENCEPHALITIS.

BY ARTHUR F. ANDERSON, M.D., BOSTON.

DURING the ten days' period July 17 to July 27, there were admitted to the Children's

and Infants' Hospitals five cases, the history and clinical course of which were of striking similarity, which presented very unusual manifestations of a profound central nervous system disorder, all of which ended fatally.

The ages of these patients ranged between 22 months and 3½ years. The history, common to all, was that of increasing irritability and persistent and intractable vomiting for a period of from four to seven days, followed shortly before death by stupor and convulsions.

Physical examination revealed few positive findings. In one (J. L.) the predominating signs were an inability to move his lower jaw, a transitory horizontal and vertical nystagmus, ptosis of the left upper eyelid, and unequal pupils. Two others (M. M. and J. T.) presented transitory facial paralysis and strabismus of one or the other eye. Another (R. G.) presented signs of an acute nephritis and was treated for several days for this condition. In none were there definite signs of paralyses.

All showed certain signs of acidosis, i.e., acetone odor to the breath, acetone and diacetic acid in the urine, while two were definitely hyperpneic.

In all of the cases in which a fundal examination was made (unfortunately such an examination was unsatisfactory in one case) there was marked papilledema of one or both discs.

Spinal fluid findings varied in the individual case. In all, however, the fluid was clear, under increased pressure and contained very slight trace of globulin. In one case the sugar was increased. Cell counts ranged from 2 to 170 cells. In two cases differential count yielded an unusually high percentage of endothelial cells; in one (J. C.) 70 per cent., in another (J. T.) 10 per cent. Cultures of the fluids were sterile.

A summary of the spinal fluid findings is given below.

Post-mortem examinations were permitted in four of the five cases. While a detailed pathological report cannot be rendered at this time, certain gross findings warrant passing mention. These consisted of an unusual friability of the brain substance, flattening of the convolutions, and marked reddening of the choroid plexus.

In view of the very acute onset, fulminating course, and spinal fluid finding, these cases were diagnosed clinically as acute encephalitis.

Case.	Color.	Pressure.	Glob.	Sugar.	Cell Ct.	Differential Count.
J. L.	Clear	Increases.	Sl. tr.	53 mg.	2	Mononuclears 100%
M. M.	"	Normal	Sl. tr.	Normal	15	Poly. 80%, Endothel. 5%, Mono. 15%
"	"	"	Large tr.	"	30	Poly. 40%, Endothel. 6%, Mono. 54%
R. G.	"	Inc.	Sl. tr.	58 mg.	10	Mononuclears 100%
H. C.	"	"	Neg.	Inc.	33	Mono. 30%, Endothelial 70%
J. T.	"	"	Sl. tr.	Inc. 67 mg.	170	Mono. 80%, Poly. 4%, Endo. 8%, R. b. c. 8%

NOTE.—Quantitative determination of sugar was made in only 3 cases. The amounts recorded in the other cases are approximate estimates.

Final diagnosis, however, must be withheld until microscopic examination of the tissues has been completed.

The severity of the disease and the occurrence of such a series of cases within a relatively short period of time, would seem to warrant a brief preliminary report.

#### Case histories follow:

**CASE 1.** J. L., age three and one half years. Child was admitted to the Children's Hospital on July 17 with a history that four days prior to that time he was unable to open his mouth and to swallow. Shortly after this his mother noticed that his mouth was drawn to the right and that he had difficulty in opening his right eye. Two days prior to admission he became very fretful and refused his food. On the following day he had a convulsion characterized by rigidity, generalized twitching, rolling up of the eyes, and frothing at the mouth. This seizure lasted about three minutes. On the day prior to admission he vomited several times and complained severely of headache.

Examination at time of admission to the hospital revealed a seriously ill child, face slightly flushed, and extremely restless. *Eyes:* Persistent internal strabismus of the right eye. Right pupil smaller than the left. Both react to light and distance. Vertical and lateral nystagmus upon forced movement. Motions otherwise normal. There was some ptosis of the right lid. *Nose:* The right nostril was obstructed; mucopurulent discharge. *Ears:* Negative. *Mouth:* The teeth were held rigidly shut, making examination of the mouth and throat extremely difficult. Upon forcing the jaws apart it was found that the child could open them voluntarily to some extent, and that the closure was partly protective, due to his difficulty in swallowing. *Throat:* Both tonsils were greatly enlarged, the left protruding far beyond the median line. Both were cryptic, the latter full of cheesy material. There was a profuse postnasal discharge. The posterior pharyngeal wall was extremely red, but otherwise negative. No evidence of abscess found. *Lungs:* Negative. *Heart:* Negative, except for a soft systolic murmur heard loudest at the apex. *Abdomen:* Negative. *Extremities:* No paralysis, edema, or clubbing. *Skin:* No eruptions, no desquamation. No injury of any kind. *Neurological:* The neck was stiff, although no Brudzinski sign was elicited. At times the child had difficulty in holding his head erect. Knee-jerks were active and equal. Kernig, Babinski, and ankle clonus were not obtained. *Eye-grounds:* Examination revealed a distinct blurring of both discs, also small hemorrhages on the temporal side of left disc. *Lumbar puncture:* Clear fluid under slightly increased pressure, with faint trace of globulin, normal amount of sugar, and two cells. *Nose and throat cultures* negative for K. L. *Blood:* White blood count, 18,200; 90% polymorphs; red blood count, 4,128,000; hemoglobin, 80%.

During the ensuing twelve hours the child grew progressively worse, suffered from several attacks of severe cyanosis and respiratory difficulty, and died at 9:57 P.M. on day of admission. Autopsy revealed no findings of any importance except marked cerebral edema.

**CASE 2.** M. M., age 2 years, 9 months. Child was admitted to the Children's Hospital at 12:30 P.M., July 17, with a history of vomiting of all food, headache, and suppression of urine for five days.

Physical examination at time of admission revealed a well-developed, well-nourished child, not acutely ill. There was a slight odor of acetone on the breath,

although other signs of acidosis, such as hyperpnea, were entirely absent.

*Neurological:* At this time entirely negative. *Fundi:* Eye-ground examination revealed distinct blurring of both discs and small hemorrhage on the temporal side of right. *Urine:* Clear amber. Specific gravity, 1025. Reaction acid. Albumin, slight trace. Sugar, 3 plus. Sediment, many white cells, few granular casts, and an occasional red cell. Repeated examinations of the urine revealed similar findings. At no time was it thought that the urine disturbance accounted for the whole picture. White blood count, 10,200.

On the afternoon of July 18, the day following admission, the child suddenly went into a convulsive state and remained therein until death ensued at 5:10 P.M., July 19.

Lumbar puncture on July 18 revealed a clear fluid with a moderate amount of globulin, sugar normal, and 15 cells. Lumbar puncture just before death, July 19, revealed clear fluid, large amount of globulin, and 30 cells. Autopsy findings were essentially negative except for cerebral edema.

It was our opinion at the time of death that the neurological signs and symptoms were probably secondary to some focal infection. After autopsy, however, we were forced to the conclusion that the cerebral condition was probably primary and accounted for the eye-ground changes, convulsions, and vomiting.

**CASE 3.** R. G., age 2 years, 2 months. Child was admitted to the Children's Hospital on July 13 with a history of vomiting and general irritability for four days.

Physical examination at time of admission was practically negative. Child did not appear to be acutely ill. There was a slight odor of acetone to the breath, although other signs of acidosis were lacking.

July 18 patient's condition was practically unchanged. Urinary examination at this time revealed the presence of a small amount of albumin and numerous casts. A tentative diagnosis of acute nephritis was therefore made.

July 19, child was distinctly drowsy, odor of acetone much more pronounced, breathing distinctly hyperpneic.

July 20, condition practically unchanged except for increasing drowsiness and internal strabismus of right eye. White blood count, 17,200.

Spinal fluid examination revealed clear fluid, under slightly increased pressure, and positive globulin, normal sugar, and 10 cells, all mononuclears.

During the day she grew progressively worse, lapsed into a comatose state, and died in convulsions at 9 P.M.

No autopsy was permitted.

**CASE 4.** H. C., age 22 months. Patient was admitted to the Infants' Hospital at 9:30 P.M., July 21, with a history of repeated convulsions and persistent vomiting for 20 hours. Physical examination on admission revealed an acutely ill, comatose child. Respirations irregular, approaching Cheynes-Stokes type. There was a distinct odor of acetone to the breath.

*Neurological examination:* Divergent strabismus both eyes. Left pupil larger than right. Transitory ptosis right upper lid. *Eye-grounds:* Distinct blurring of the margins of both discs with two small hemorrhages in the lower nasal region on right. *Neck:* Rigid. Brudzinski variable. Kernig positive. Babinski positive. Ankle clonus negative. Otherwise physical examination was entirely negative. Lumbar puncture yielded clear fluid under increased pressure, positive globulin, normal sugar, and 30 cells, chiefly lymphocytes. *Urine:* Negative. White blood count, 15,200.

Convulsions ensued one after the other, despite

drastic treatment. *Autopsy findings:* Post-mortem examination revealed marked cerebral edema, flattening of convolutions and reddening of the choroid plexus.

CASE 5. J. T., aged 22 months. Patient was admitted to Infants' Hospital on July 26, with a history of general irritability and fretfulness, refusal of food and vomiting for a period of three weeks. Five days prior to admission the vomiting became more pronounced and child passed into a semi-stuporous state. There were no convulsions or twitchings. Respirations were very irregular, frequently sighing in character.

Physical examination at time of admission revealed a well-developed and nourished male infant, extremely pale, very listless and apparently indifferent to his surroundings. *Head:* Enlarged, fontanel closed. McEwen sign positive. *Eyes:* Pupils regular, equal, react to light. No nystagmus or ptosis. *Fundi:* Marked papilledema of both discs, especially of the left. The veins were engorged and tortuous. *Neurological:* Flaccidity pronounced. No rigidity of neck. Brudzinski, Kernig, Babinski, and ankle clonus were not obtained. Lumbar puncture yielded a clear fluid, under increased pressure, slight trace of globulin, increased sugar (qualitative) and 170 cells. Of the latter 80% were mononuclear, 8% endothelial, 4% polymorphonuclear, and 8% red blood cells. White blood count, 27,000; 75% polymorphonuclears. *Urine:* Clear, amber, specific gravity 1030, albumin slight trace; sugar, small amount; acetone, large amount. Sediment, occasional hyaline cast, very few red blood cells and numerous white blood cells. Temperature, 100 degrees on admission. *Course:* Following the lumbar puncture, the infant went into a generalized convulsion, in which condition he remained for five hours. Following the administration of morphine the convulsions subsided, but patient succumbed eight hours after admission. *Autopsy finding:* Post-mortem revealed a very large, soft, friable brain, the convolutions of which were greatly flattened. The choroid plexus was of an angry red appearance. Otherwise gross examination was negative.

## The Massachusetts Medical Society.

LIST OF MEMBERSHIP CHANGES, MAY 1, 1923.  
TO AUGUST 1, 1923.

### OFFICIAL LIST.

Compiled by the Secretary.

#### ALPHABETICAL LIST.

Attention is called to the New Fellows admitted during the Society year, 1922-1923, published in the *BOSTON MEDICAL AND SURGICAL JOURNAL* of July 12, 1923, vol. 189, No. 2, pp. 67, 68.

Abbe, Alanson J., from Fall River to Pottersville, 22 Wood St.  
Adams, Frank Denette, from Boston City Hospital. Address unknown.  
Ames, Forrest B., from Boston to Bangor, Me., Eastern Maine Gen'l Hospital.  
Applebaum, Jacob, Dorchester, Office now Boston, 536 Commonwealth Ave.  
Auger, Louis L., Montreal, Canada. Retired by Council, June 12, 1923.  
Baker, Harold W., now 20 Mt. Vernon St., Boston.  
Balcom, George F., from Swanzy, N. H., to Keene, N. H., 257 Washington St.  
Barron, Maurice E., Boston, now 484 Commonwealth Ave.  
Batal, John T., from Lawrence to Worcester, Memorial Hospital.

Baum, Ewald George, Natick, 19 West Central St. 1904 } Bellamy, William Woolsey, Dorchester, 17 Bow-1923 } doin Ave. Restored by the Council, June 12, 1923.  
Blair, Orrin C., from Northampton to Clark's Summit, Pa., Hillside Home.  
† Bliss, George Danforth, died at Baltimore, June 7, 1923, aged 67.  
Bliss, William Everett, from Medford to Springfield, 186 St. James Ave.  
† Blodgett, Albert Novatus, died at Boston, July 3, 1923, aged 75.  
Blodgett, Stephen H., South Lincoln, office now 353 Commonwealth Ave.  
Boardman, William Sidney, Boston, office now 362 Commonwealth Ave.  
Bolton, Charles James, from Taunton to State Farm, Bridgewater.  
Brett, Asley Lionel, from Boston to Brookline, office Boston, 240 Newbury St.  
† Burton, Stephen Casper, died at Pittsfield, May 17, 1923, aged 72.  
Bush, Arthur Dermont, from Grand Forks, N. D., to Merton, Pa.  
Callanan, Sampson Aloysius, died at Orleans, Mass., July 20, 1923, aged 60.  
Carr, Earle Burton, of Silver Creek, N. Y. Resignation accepted, June 12.  
Champ, Anthony Marius, Brockton, now 23 Main St.  
Cooper, Olive A., Revere, now 26 Bradstreet Ave.  
Costello, John Henry, died at Dorchester, May 2, 1923, aged 49.  
Crabtree, Harvard H., Boston, now 270 Commonwealth Ave.  
Curran, Louis F., Boston, now 409 Marlborough St.  
Curtin, John F., Lawrence, now 175 Haverhill St.  
Cutler, Charles Norton, from Boston to Cocoaanut Grove, Florida.  
1906 } Deems, Oren Manfred, Springfield, 317 Main-1923 } St. Restored by the Council, June 12, 1923.  
Dehn, Edward William, died at New Bedford, June 19, 1923, aged 68.  
Deitch, John, of Manchester, N. H. Resignation accepted June 12, 1923.  
Dunham, Rand A., from Salem to Rumford, Me., Stratglass Bldg.  
Easter, Edna F., from West Medford to Arlington Heights, 1138 Mass. Ave.  
Edsall, David Linn, Cambridge, office now Roxbury, 240 Longwood Ave.  
Edwards, William L., Boston, now 15 Hereford St.  
Eliot, Martha M., from Boston to New Haven, Conn., 330 Cedar St.  
Faxon, Endora W., from Arlington Heights to West Newton, 500 Crafts St.  
Finnegan, Francis A., Lowell, now 238 Moore St.  
Frank, John Raymond, of New York City. Resignation accepted, June 12.  
Friedman, Harry F., from Allston to Newton Center, office Boston, 270 Commonwealth Ave.  
Gallagher, William H., from Boston to Worcester, 223 Salisbury St.  
Galleani, Iliia, from San Francisco to Annisquam, 42 Dennison St.  
Garfield, Walter T., Cambridge, office now 19 Bay State Road.  
Golub, Jacob Joshua, of Boston. Address unknown.  
Goss, Francis Webster, died at San Francisco, July 9, 1923, aged 81.  
Grant, William Herbert, Boston, transferred from Norfolk to Suffolk by Council, June 12, 1923.  
Griffin, Arthur G., from Malden to Shawsheen Village, Andover, Kensington St.  
Haggart, Gilbert Edmund, of Boston. Resignation accepted June 12, 1923.  
Hall, Gardner W., Boston, now 475 Beacon St.  
Ham, William A., Dorchester, now 162 Ashmont St.  
Hammond, John Wilkes, Jr., from Cambridge to Peking, China, Peking Union Medical College.  
Hanson, William C., Belmont, now 32 Willow St.

- 1875 } Harding, Edward Mitchell, Boston, 146 Massachusetts Ave. (Name omitted from last Directory through error.)  
1921 }  
Harrington, Elmer J., Holyoke, now 200 Pine St.  
†Hastings, Judson Worthington, died at Feeding Hills, July 3, 1923, aged 70.  
Hayden, Edwin Parker, Boston, now 252 Marlborough St.  
Higgin, Harriet M. G., of Allston. Resignation accepted by Council June 12.  
Hillard, James P., Springfield, now 26 Whittier Ave.  
Hobgood, Legan Henry, New Bedford, now 15 Eighth St.  
Hodgson, John S., from West Roxbury to Jamaica Plain, 24 Myrtle St.  
Hogan, Daniel J., Charlestown, office Boston, now 270 Commonwealth Ave.  
Hunt, Alice E. P., from Holyoke to Los Angeles, Cal.  
Hunt, George E., from Holyoke to Los Angeles, Cal.  
Irving, Harry W., Boston, now 1069 Boylston St.  
Jackson, William B., Lowell, now 228 Gibson St.  
Johnson, William A., Lowell, now 137 Merrimack St.  
Kaplan, Edward, from Springfield to Everett, 8 Malden St.  
Kennedy, Edward A., from Great Barrington to Pittsfield, 246 North St.  
Kilbourn, Arthur Goss, Groton, Main St. Restored by Council June 12.  
Lawrence, Charles H., transferred from Norfolk to Suffolk, June 12.  
Lipsitt, Charles S., New Bedford, now 283 Pleasant St.  
Lorimer, Felix, from Los Angeles, Cal., to Boston.  
Lynch, Frederick James, transferred from Middlesex South to Suffolk, June 12.  
Lynch, James J., Boston, now 270 Commonwealth Ave.  
MacMillan, Alexander Stewart, from West Somerville to Boston, 483 Beacon St.  
MacMillan, Leslie Hooper, from West Somerville to Boston, 207 Audubon Rd.  
1911 } Mahoney, Matthew Patrick, Lowell, 504 Sun 1923 } Bldg. Restored by Council June 12.  
Marshall, Augustus T., from Chelsea, Vt., to Randolph, Vt.  
McDonald, John Francis, Lynn, now 2 Kingsley Terrace.  
McKeen, Sylvester F., from Allston to Brookline, 96 Dean Road.  
Mella, Hugo, Boston, now 224 Commonwealth Ave.  
Meredith, Florence L., from Philadelphia to Watertown, 37 Garfield St.  
1910 } Messer, Edward Raymond, Lenox. Restored 1923 } by Council June 12.  
†Miller, Ernest Parker, Fitchburg. Retired by Council June 12.  
Miller, Samuel Osgood, of Three Rivers (Palmer). Address unknown.  
Morse, Almon G., from Hingham to Fort Thomas, Ky., U. S. Vets' Hospital.  
Nadel, Samuel, from Boston to Roxbury, office Boston, 536 Commonwealth Ave.  
†Nason, Osman C. B., of Sharon, retired June 12.  
Nichols, Andrew 3d, of Hathorne. Address unknown.  
O'Brien, Frederick William, Boston, now 465 Beacon St.  
1900 } Orr, Samuel Sanford, Brookline, 1489 Beacon 1923 } St. Restored by Council June 12.  
Otis, Walter J., from Boston to New York City, 471 Park Ave.  
Parker, Wallace A., from Dorchester to Fiskdale.  
Partington, Cyrus Brown of Denver, Colo. Address unknown.  
Penhallow, Dunlap Pearce, from St. Louis to Jefferson Barracks, Mo., U. S. Vets' Hospital No. 92.  
†Pillsbury, George H., Lowell, now 53 Central St.  
Pratt, Emily Adelaide, of Long Island, N. Y. Address unknown.  
Pratt, Joseph H., Boston, now 270 Commonwealth Ave.  
Putnam, Willard A., Cambridge, now 16 Garfield St.  
Raeder, Oscar J., from Roxbury to Boston, 39 Bay State Road.  
Reeves, Marcellus, Boston, 1069 Boylston St. Transferred from Norfolk to Suffolk, June 12.  
Rice, Florence F., from Allston to Brookline, 140 Thorndike St.  
Rice, Kenneth Harrison, from Worcester to Easthampton, 50 Union St.  
Ripley, Frederick J., Brockton, now 905 Belmont St.  
Robie, Alice H., from Cambridge to Los Angeles, Cal., 671 So. Coronado St.  
Rock, John C., Boston, now 24 Marlborough St.  
Roderick, Charles E., from Taunton to Melrose, 18 Lake Ave.  
Rolfé, William A., Boston, now 331 Beacon St.  
Roughan, Charles M., Lowell, now 174 Central St.  
Ruble, Wells A., from Melrose to Watford, Herts, England, The Stanborough.  
Sargent, George Amory, died at Randolph, N. H., May 6, 1923, aged 68.  
Sargent, Oscar F. L., now Farmington, N. H., P. O. Box 436.  
Sawyer, Edward Julius, from Newton to Lawrence, Arlington Mills.  
Shafer, Rudolph Jonas, from Lowell to Kings Park, Long Island, Kings Park State Hospital.  
Sheppard, Philip Albert Edward, formerly of Boston. Expelled by vote of the Society, June 13, 1923.  
Shoemaker, Amzi B., North Attleborough, now 192 Towne St.  
Shoninger, Lee Simon, of New York City, died at New York, April 7, 1923, aged 43.  
Simmons, Channing C., Boston, now 205 Beacon St.  
Smith, Curtis Everett, San Francisco, Cal., now 1374 Aguello Boulevard.  
Smith, Lawrence Weld, of Manila, P. I. Address unknown.  
Smith, Thomas Burke, died at Lowell, May 21, 1923, aged 53.  
Stamas, Theodore A., Lowell, now 322 Merrimack St.  
Steele, George L., from Verona, N. J., to New York City, 130 Claremont Ave.  
Steffen, Anna E., from Long Island Hospital to Dorchester, State Hospital.  
Sziklas, Charles, Boston, now Robinson Memorial Hospital, Stoughton St.  
Thompson, James Allan, from Worcester to Cambridge, 189 Harvard St.  
Titus, Raymond S., Boston, 35 Bay State Rd. Transferred from Norfolk to Suffolk by Council, June 12.  
Towle, Clarence C., Santa Barbara, Cal., now Hope Ave.  
Vershow, Nathan, of Hartford, Conn. Resignation accepted June 12.  
Vivian, William J., from Jamaica Plain to West Roxbury, 92 Temple St.  
Vogel, George L., Boston, now 536 Commonwealth Ave.  
Watkins, Royal P., Worcester, now 29 Pearl St.  
Watson, Francis Sedgwick, of Boston. Address unknown.  
Webber, Isaac M., from Tewksbury to Rochester, Minn., 819 Second St.  
Wentworth, Mark H., Concord, now 2 Elm St.  
Wheeler, Emma H., of New Bedford. Resignation accepted June 12.  
Wilkins, Samuel H., West Medford, office Boston, now 270 Commonwealth Ave.  
Williams, Carl A., from Worcester to St. Petersburg, Fla., Central National Bank Building.



Winsor, Allen P., Boston, 402 Marlborough St. Transferred from Norfolk to Suffolk by Council, June 12.  
Withington, Alfreda B., from Paris, France, to Pittsfield, 73 North St.  
Woo, Shutai Tinwang, of New York City. Address unknown.  
Woodworth, John D. R., of Hoboken, N. J. Address unknown.  
Yudelman, Abraham H., from Boston to Newton Lower Falls, Newton Hospital.  
Zelig, David, from Boston to Haverhill, 314 Washington St.  
Zundell, Samuel C., Roxbury, now 617 Warren St.

Changes of address should be sent to the Secretary, W. L. Burrage, at 182 Walnut St., Brookline.

†Retired member.

### Book Reviews.

*The Unadjusted Girl, with Cases and Standpoint for Behavior Analysis.* By WILLIAM I. THOMAS. Little Brown & Co. June, 1923.

This book will attract those who are interested in the stories of young women who have illegitimate sex experiences. The main value of this book is in the history of the various types of prostitutes and near-prostitutes. Aside from the value of these histories, I see little in this book which can be of value to medical men. The book says little about the mental level of the delinquents. It does not indicate the large amount of deficiency and actual psychosis amongst such young women as forming the class under question. The author says a good deal about the wish in relation to immorality, but I do not see that he has said anything more than that sexual desire, desire for good times, the wish to escape from poverty, the love of good clothes and finery, yearning for admiration, and the urge of sex passion itself, is responsible for sex delinquency. The economic phases of prostitution are not touched upon to any great extent.

As a volume of case histories this book has value. As a scientific analysis of the causes underlying sex delinquency or as a therapeutic guide to readjustment, it has little of value.

*Practical Local Anesthesia.* By ROBERT EMMETT FARR, M.D. Philadelphia: Lea & Febiger. 1923. Pp. 529.

Dr. Farr is a master of the art and science of local anesthesia, and in this book he carefully outlines the methods that have enabled him to perform practically all operations without recourse to inhalation anesthetics. Being an enthusiast on his subject, he devotes considerable space to extolling the virtues of the use of procain and its allies. Although most of his own work is done with simple infiltration, all methods of using local anesthetics, e.g., regional nerve block, paravertebral, splanchnic, etc., are thoroughly discussed, with the exception of spinal anesthesia. For many of the more unusual

methods which have been ably reported by other authors, Farr makes free use of quotations, most frequently from Braun. The fundamental principles of local anesthesia and a review of the anatomy of the nervous system are well covered. The generous use of case reports adds to the clearness of the text.

The secret of Dr. Farr's success lies in the skillful adaptation of his surgical technic to this simple, reliable anesthesia. The many changes in operative methods largely included in his term, "surgical strategy," are so well considered that "Practical Local Anesthesia" might be listed among books on surgical technic. Many ingenious instruments invented by the author as an aid to operating under local anesthesia are described. With this armamentarium, cholecystectomies, gastro-enterostomies, hysterectomies, Rammstedt operations on infants, extensive thoracotomies, and other equally difficult operations are performed without distress to the patient. The mortality is lowered, certain operative features are aided by the coöperation of the patient, and postoperative distress and acidosis are minimized.

"Practical Local Anesthesia" may be briefly described as a clear exposition of a technic that should enable a competent surgeon to perform most operations without the disadvantages of general anesthesia.

GLASGOW ROYAL CANCER HOSPITAL.—The report submitted at the annual meeting of this Hospital showed the excellent work which is being carried on for the amelioration of this dread disease, which, according to the latest report of the Registrar-General for Scotland, is on the increase; it is estimated that 123 per 100,000 died of cancer in one or other of its forms. Particular reference was made to the important investigations being carried on in the research department. Inquiry is being conducted into the biological significance of certain constituents of the blood in cancer patients. Further, based on our knowledge that chronic irritation plays an important part in the etiology of cancer, and the possibility of its experimental production by the application of coal-tar products, careful research was being conducted to discover if possible the special coal-tar derivatives which set up the characteristic cell proliferation of the disease. The financial statement showed an ordinary income of £4,319, and ordinary expenditure of £7,264. The deficit had been met from extraordinary income of £6,719, the balance of £3,768, being carried to capital account. It was reported that the use of X-rays according to the deep therapy methods practised in Erlangen was giving excellent and encouraging results. A strong appeal was made to the public for financial support for the research department.—*Glasgow Medical Journal.*

## THE BOSTON Medical and Surgical Journal

Established in 1828

Published by The Massachusetts Medical Society under the jurisdiction of the following named committee:

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### SOME FEATURES OF THE WORK OF THE BOARD OF REGISTRATION IN MEDICINE.

It is probable that few physicians realize the responsibilities and perplexities of this Board, charged with the duty of determining the qualifications of applicants for registration as physicians and the administration of the statutes which define the varieties of misconduct which call for judicial action.

The Board is often between the upper millstone of pressure exerted by patients with an alleged grievance and the nether stone of professional remonstrance against interference with the practice of individual physicians.

The members of the Board are physicians familiar with medical affairs and are qualified to give good service in the examination of the candidates for licensure.

The convicted criminal can be disposed of comparatively easily. The most perplexing problems to be dealt with are found when charges are filed alleging gross misconduct by a physician in the practice of his profession, for these charges almost always embody questions

of medical ethics, and the clearest reasoning is required to enable one to formulate logical conclusions, because the dividing line between the legally constituted power of the Board and the limitations of the law is exceedingly fine and therefore open to diverse interpretation. It has happened repeatedly that patients and patients' friends have felt that a doctor has failed to render proper service and therefore should be disciplined by the Board. For example, a physician who had been the attendant on a previous occasion was engaged for a similar service. The material facts are as follows: At about the time when his services might be required he was urgently summoned in the night to treat the patient. He responded and, without making a thorough examination, according to the testimony, administered an anodyne and left the patient. According to his own testimony he assumed that the suffering was due to a functional disorder, and he failed to discover or even attempt to discover the real cause of the disease other than by interpretation of the patient's statement and the general evidence of suffering. Within a short time there were other evidences of a serious underlying cause of the symptoms and the patient died within a few hours.

Other instances of similar nature are coming to the attention of physicians from time to time, as may be shown in the acute abdominal lesions requiring prompt surgical interference, for examples, perforation of the stomach, intestinal obstructions, and others of similar import, and which have been treated expectantly without any reasonable attempt at a diagnosis. So, too, the overlooked and unsuspected cases of diphtheria have presented questions which have had to be considered by the Board.

Since the Board is composed of men whose experience in law is confined, to a large extent, to the conduct of hearings, even though the understanding of ethical conduct is good the technical knowledge of legal procedure and the interpretation of law may not be sufficient to enable these physicians, offhand, to meet the onslaught of objections and explanations of the principles of law as presented by an astute lawyer in behalf of his client.

In cases of this kind the Board acts under the provision of the statute which gives authority to revoke or suspend registration for gross misconduct in the practice of medicine. Lawyers argue that misconduct means the commission of some act in which there is or should be known to be some moral delinquency, and cite the performance of an abortion as an illustration of misconduct, and further contend that a mistake does not carry with it the assumption of misconduct. One of the definitions of misconduct, according to Webster's International Dictionary, is "wrong or improper conduct,"

and among the synonyms of misconduct the words "delinquency" and "mismanagement" are found. An eminent physician agrees with the stand taken by the lawyers, and contends that if doctors can be brought before the Board for mistakes that great injustice will be done and suits for malpractice multiplied. He evidently overlooks the fact that there are mistakes and mistakes. No court would permit an adverse verdict in the case of an honest mistake made after careful study of a case by a physician of average ability. All that is required in medicine, so far as the law applies, is average ability and average diligence. In all fairness to the people, are we not bound to recognize the right of the individual to expect average quality of service? If not, why do we have laws regulating the practice of medicine? Does the securing of registration carry with it the right to deal carelessly with the lives of people? Have we any right to adopt the trades union spirit of protection for ourselves when a patient suffers needlessly or life is lost? Every other human activity which is concerned in responsibility for the safety of human beings carries a legal responsibility. Does the law or public opinion say that an engineer on a locomotive can carelessly disregard danger signals which are recognized as having a definite meaning? The engineer may have been purely passive, as the doctor may be, but if he does not use the common knowledge of an engineer and apply that knowledge he is culpable, and in like manner it is logical to argue that if the doctor does not use his knowledge and the patient suffers he is equally blameworthy. It is not for us to say that justice cannot be applied in the case of the patient as against the doctor. It should only concern us when doctors are made the victims of unjust laws and blackmailing adventurers. If we go too far in our attempt to protect ourselves we may find some day that the public has become deeply interested in the matter of the quality of medical service. We had better meet these issues before the opportunity to adjust ourselves to the rights of individuals is taken over by our unfriendly critics. We disseminate knowledge of dangers of disease as the common enemy of mankind. May we not strive to eliminate, so far as possible, the danger of inefficient medical service which, happily, is not a large factor in the production of mortality?

The conflicting opinions as to the method of approach are troubling our representatives on the Board. They would be glad to have the opinions of our best minds. If it is the agreed opinion of lawyers and physicians that misconduct does not apply to obvious errors of judgment or behavior, the Board can be saved that which now seems to be a disagreeable duty. Will the profession help the Board of Registration in Medicine?

## THE AFFILIATED MEMBERSHIP OF THE MASSACHUSETTS TUBERCULOSIS LEAGUE.

THE Secretary of the League has distributed a report of the Committee on League Affiliated Membership which has been adopted by the Board of Directors of the State League. By this action the League has adopted a classification of the constituent organizations under the designations of A, B and C.

The dictum is laid down that "any organization financed in whole or in part by the Health Seal sale in December should include a program of education in its service to the community." Every one would agree that education is the underlying important factor in the contest against tuberculosis, but it may be pertinent to suggest that the state organization, with its facilities, might suggest to local organizations from time to time more definite plans particularly suitable to communities in which the weaker association members operate.

In the adoption of the classification, the approved organizations under Division A include the Boston Tuberculosis Association, the Cambridge Anti-Tuberculosis Association, the Franklin County Public Health Association, the Hampden County Tuberculosis and Public Health Association, the Hampshire County Public Health Association, the Lawrence Tuberculosis League, the Malden Anti-Tuberculosis Society, the New Bedford Anti-Tuberculosis Association, the Newburyport Anti-Tuberculosis Association, the Newton Welfare Bureau, the Southern Worcester County Health Association, and the Public Health Association of Southwestern Middlesex County.

The other twenty-three organizations are in either Class B or Class C, and those in Class C will cease to affiliate directly with the League, but are asked to affiliate through county associations. In the report it is stated that the recommendations are submitted solely in the desire to be of help to each local association concerned. It is to be hoped that the needed help will be given, but at the present time it is rather difficult for the members of small, weak organizations to understand how an arbitrary ruling of this character can be other than disconcerting. Referring to one of the associations discredited by being classed in a secondary position, the soothing faint praise is offered as follows: "The committee appreciates the excellent work this association has done," etc., and then goes on to recommend that the organization be reorganized for the purpose of securing a board of management which will be more actively interested in its program of work, and which will formulate a more clearly defined and broader program, etc. This association may accept the criticism in due humility, with the belief that "the meek shall in-

herit the earth," and turn the other cheek for the expected castigation.

It is evidently the purpose of the State League to compel all of the smaller organizations to unite in county or subdivisions of county health organizations. How this is to promote activity and interest in smaller places remains to be seen. In one district a fairly prosperous anti-tuberculosis organization has been urged to join a certain divided county unit. This amalgamation would add nothing to the efficiency of the organization referred to, but would give to it the privilege of contributing to the treasury of this combination, and the honor of a minor representation on the official board.

Several of the recommendations carry an implied threat. For example: "This Association is recommended for affiliation with the understanding that it will proceed to establish a well-formulated anti-tuberculosis program for the entire county."

All through the report dealing with the B and C classes there are direct or implied criticisms. The anti-tuberculosis campaign is too well established to be disrupted by a mistaken policy, and all workers in this field will enjoy following the leadership of those who can formulate constructive policies.

The Massachusetts Tuberculosis League has a record of achievement which carries weight in any plan sponsored by it, and if it is believed that the greatest good to the greatest number requires drastic action the end may justify the means, but in a movement which ought to have very general support, and which aims to reach to the uttermost corner of the state, perhaps diplomacy and evidence of material help to the weaker organizations may secure larger results.

Those who framed the report evidently fail to understand that in certain localities it seems to be quite impossible to secure the services of some persons who could give efficient assistance, and in others there are inhibiting influences which hamper the work of those who are trying to accomplish something. It is very probable that the promoters of some of the smaller organizations would welcome the opportunity to transfer the burden of office to others, and if the State League will perfect an approved local organization the result might meet with general approval.

We shall be very much pleased to learn that we are in error in our interpretation of the effect of this circular and that the discredited organizations can and will improve the conditions in each specified district, but we are of the opinion that this is not the time to take drastic action, but, on the contrary, the League can accomplish more by encouragement and coöperation, rather than under the provisions embodied in the somewhat arbitrary and apparently receive recommendations as found in the report.

## AN OSTEOPATHIC EXPLANATION OF CANCER.

THE recent congress of osteopaths produced at least two theories of the causation of cancer. If we may believe the daily press, one of these theories held that diet was the main factor. The other theory, as set forth by the *Boston American*, is even more naïve. A well-known osteopath of Boston, an ex-president of the American Osteopathic Association, outlines the theory of the causation of cancer which was originated by Dr. Emery of Los Angeles. According to these gentlemen, "Cancer is the result of neglect. It is the result of very gradual accumulation. That can be most simply illustrated by the mechanism of nature in its reflex workings in the brook, which is clear while it runs swiftly and in a straight channel. But when there are eddies and whirlpools, débris accumulates and lodges in pockets and corners of the stream.

"It is the same way with the human body. Mechanical interferences, circulation of the blood and lymph with the nerves causes eddies and whirlpools and accumulations of débris. When these accumulations occur in certain parts of the body nature is often unable to cope with the situation and the result is finally a perversion of natural processes. Cellular growth becomes perverted. The cells grow into cancer instead of into natural tissue."

This theory has two qualifications to recommend it. One is its simplicity. All great theories are simple. It is easily understood. Homely analogies describe it; there is no burden of ultrascientific—or even of scientific—terms. The other qualification is that the theory is artistic. Poets have always likened the stream of human life to the futile meanderings of a brook.

From the osteopathic point of view the theory has yet another qualification, which is that if people were to accept the truth of the explanation and were to act upon it, the converts to the osteopathic faith would be as the sands of the sea. Babies would imbibe, along with their mothers' milk, a deeply rooted faith in "adjustments." The osteopath would oust the pediatrician, and the child, accustomed from babyhood to the passive calisthenics of the manipulator, would feel that no crisis of life could be met without a few preliminary passes.

It is indeed disheartening to realize that a not inconsiderable portion of the people of this country have placed the care of their health in the hands of men who can seriously propose so imaginative and so unscientific a theory as this. The only consolation is that no system of medicine, the proponents of which evince such slight ability in the way of critical thinking, can last for long.



### SMALLPOX.

ALTHOUGH up to the present time this disease seems to be less prevalent throughout the United States as compared with last year, yet an increase is noted in a few states, as shown in the reports from California, Indiana, and Wisconsin. Philadelphia quarantined a section of the city because a case appeared, and Cleves, Ohio, proposes to vaccinate the employees of an important industry and all school children because of the beginning of an epidemic.

Mr. Nunn, of the Medical Liberty League, Inc., has started a campaign against compulsory vaccination because, he says that he believes that smallpox is such an unimportant disease that stringent measures of control are unnecessary. He claims that smallpox is one of the vanishing diseases.

Mr. Nunn ought to visit the places where smallpox appears, note the business and social disturbances incident to an outbreak, interview some of the patients, see for himself the manifestation of the disease and the efficacy of control through vaccination.

### Miscellany.

#### RURAL HEALTH SERVICE.

NEW YORK is trying to solve this problem, which has been under discussion in many states. For several years the New York State Department of Health has been urging attention to the necessity of health work in the smaller places. In 1920 and 1921 this department offered a plan for official health centers which was opposed by the medical profession. On April 11, 1923, Governor Smith, in a message to the Legislature, advocated more community hospitals, suggesting that, in those counties in which there are no cities of the first or second class where appropriations are made for small hospitals in rural districts or other public health activities, the state should match dollar for dollar all such appropriations. The plan, however, should first meet the approval of the State Commissioner of Health. The Legislature passed a bill with these recommendations and it has been signed by the Governor and is now a law. This plan seems to have met with the approval of the medical profession.

#### REPORT OF ADVISORY COMMITTEE ON THE HEALTH PROGRAM OF THE AMERICAN NATIONAL RED CROSS.

THE American Red Cross, having had some difference of opinion among its members as to the character and extent of its peace-time health program, in October, 1922, appointed a Health

Advisory Committee to investigate and report on this matter.

The Committee which formulated the report was composed of the following:

Dr. William H. Welch, Baltimore; president of the Maryland State Board of Health and member of the faculty of Johns Hopkins University.

Dr. Hermann M. Biggs, New York City; late Health Commissioner of the State of New York.

Dr. Thomas S. Cullen, Baltimore; member of the faculty of Johns Hopkins University, and medical practitioner.

Dr. Hugh S. Cumming, Virginia and Washington; Surgeon-General of the United States Public Health Service.

Dr. Livingston Farrand, Ithaca, N. Y.; president of Cornell University.

Dr. Franklin H. Martin, Chicago; medical practitioner, director of the American College of Surgeons.

Dr. Fred B. Lund, Boston; practicing surgeon and chief surgeon at the Boston City Hospital.

Dr. George M. Piersol, Philadelphia; medical practitioner, editor *American Journal of Medical Science*.

Dr. John H. J. Upham, Columbus, Ohio; medical practitioner, member of the House of Delegates of the American Medical Association. Professor C.-E. A. Winslow, New Haven, Conn.; of Yale University Medical School.

This Committee, after carefully considering the question from all angles, unanimously adopted a report providing for the Red Cross a definite constructive program which every member and every chapter may follow with confidence, and decided that a director of Health Service should be chosen as soon as a suitable person could be found.

This Committee expressed its approval of present policies of the Red Cross, which provide for the organization of classes in Home Hygiene, the Care of the Sick, Nutrition, First Aid and Life Saving, the Junior Red Cross program, the enrolment of nurses and the organized development of Public Health nursing in rural and semi-rural districts.

The danger of creating criticism and the importance of coördinating with the work of constituted health authorities and of the medical profession was emphasized.

#### DIABETIC COLUMN.

##### SCALES.

Have you taken advantage of the John Chatillon & Company's offer to doctors and hospitals in Massachusetts and secured a \$10 pair of food scales from the New England Deaconess Hospital for \$5.50? E. P. JOSLIN.

### News Items.

**DR. EDWIN PARKER HAYDEN** has moved his office from 279 Clarendon Street to 252 Marlborough Street, Boston.

**SUCCESSOR TO DR. BIGGS.**—Dr. Matthias Nicoll, Jr., has been appointed to succeed the late Dr. Hermann M. Biggs as New York State Commissioner of Health.—*Science*.

**AN EXAMPLE TO BE FOLLOWED.**—The Barnwell County (South Carolina) Medical Society has adopted resolutions expelling all members who now or in the future practice Abrams' methods of treatment.

**WORCESTER NORTH DISTRICT MEDICAL SOCIETY.**—The first quarterly meeting was held at Hotel Raymond, Fitchburg, Tuesday, July 24, at 4.30 P.M. The speaker was Harry W. Goodall, M.D., of Boston, and his subject "Insulin."

**PLYMOUTH DISTRICT MEDICAL SOCIETY.**—At the meeting of Plymouth District Medical Society at Brant Rock, July 19, it was voted that the annual dinner of the Massachusetts Medical Society should take place after the noon hour. There were twenty-five members present.

**CAMBRIDGE [ENG.] HONORS DR. WELCH.**—At the congregation of the University of Cambridge, England, held on June 12, the honorary degree of Doctor of Science was conferred upon Dr. William Henry Welch, director of the School of Hygiene and Public Health of the Johns Hopkins University.—*Science*.

**NEW ENGLAND ROENTGEN RAY SOCIETY.**—At its last meeting, the New England Roentgen Ray Society elected for its officers for the coming year the following: President, Dr. P. F. Butler, Boston; Vice-President, Dr. W. A. LaField, Bridgeport, Conn.; Secretary and Treasurer, Dr. A. S. MacMillan, Boston; member of Executive Committee, Dr. George W. Holmes, Boston.

**CLINICAL DEMONSTRATION AT THE PETER BENT BRIGHAM HOSPITAL.**—On Wednesdays, during August, there will be held in the amphitheatre of the Peter Bent Brigham Hospital, from 10 to 11 o'clock, a clinical demonstration of diabetic patients, with particular reference to the use of insulin in treatment. All physicians are cordially invited to attend these demonstrations.

**SECRETARY OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.**—Mr. Homer N. Calver has been elected acting Executive Secretary of the A. P. H. A., to fill the vacancy caused by the resignation of Mr. A. W. Hedrich. Mr. Calver

is a graduate in sanitary engineering from the Massachusetts Institute of Technology and has had experience in health work in South Carolina, in France during the war, and in New York City.

**HAMPDEN DISTRICT MEDICAL SOCIETY.**—The regular summer meeting of the Society was held at the Westfield State Sanatorium on Tuesday, July 24, at 4 P.M. Dr. H. D. Chadwick entertained the Society. There was an opportunity to inspect the Sanatorium and see some interesting cases. A program of sports, including a baseball game between Holyoke and Springfield Fellows, proved of interest. At 6 P.M. a supper was served out of doors.

**SMALLPOX IN NEW YORK CITY.**—The Department of Health, New York City, reports a few cases of smallpox and states that "this series of cases was entirely due to mistakes in diagnosis on the part of physicians." There are few opportunities for the average physician to see cases of smallpox. However, any patient with a disease which might be smallpox should be carefully studied, and if any doubt exists in the mind of the attending physician expert advice should be sought at the earliest possible moment. The favorable time for controlling an outbreak is when the first case is encountered.

**WEEK'S DEATH RATE IN BOSTON.**—During the week ending July 21, 1923, the number of deaths reported was 173, against 174 last year, with a rate of 11.71. There were 19 deaths under one year of age, against 29 last year. The number of cases of principal reportable diseases were: Diphtheria, 40; scarlet fever, 23; measles, 69; whooping cough, 16; typhoid fever, 4; tuberculosis, 36. Included in the above were the following cases of non-residents: Diphtheria, 2; scarlet fever, 3; measles, 4; whooping cough, 1; tuberculosis, 5. Total deaths from these diseases were: Diphtheria, 3; scarlet fever, 1; measles, 3; tuberculosis, 11. Included in the above was the following case of a non-resident: Diphtheria, 1.

### Obituary.

#### SAMPSON A. CALLANAN, M.D.

**DR. SAMPSON ALOYSIUS CALLANAN**, a Fellow of the Massachusetts Medical Society, died at his summer residence at Orleans, Mass., July 20, 1923, at the age of sixty.

He was born at Port Jervis, N. Y., on December 11, 1862, moving to Boston at an early age. He was graduated from Boston College with a degree of A.B. in 1882, and received his A.M. degree from the same college in 1883. He then attended the Harvard Medical School, receiving

the degree of M.D. in 1886. He immediately started practice at 82 Warren Street, Roxbury, and some years later moved to 109 Warren Street, which was his home at the time of his death.

He is survived by his wife, Mary G. Callanan, a daughter, Charlotte P., and two sons, Paul E., of Lee, Higginson & Company, and Dr. Francis J. Callanan, chairman of the Committee of Arrangements for the Annual Meeting of the Massachusetts Medical Society in 1924.

### Correspondence.

#### TRAINING OF CHIROPRACTICS IN VETERANS BUREAU.

The following letter has been received by the Secretary of the Massachusetts Medical Society:

Dear Sir:

This will acknowledge receipt of your recent letter wherein you forward to the President of the United States a copy of resolutions adopted by the Massachusetts Medical Society, protesting against the training of veterans of the World War in chiropractic, which was forwarded to this Bureau for reply.

You are advised that on May 18, 1923, an order was issued governing chiropractic training. Under the terms of this order, training in chiropractic will be authorized only to beneficiaries who, prior to the original induction into training, had educational preparation and qualifications, shown by satisfactory credits and evidence, required for entrance into a Class A medical college. Beneficiaries who meet the above qualifications may be inducted into a course of chiropractic training in schools located in those states where the practice of chiropractic is legal. Prior to induction the beneficiary is required to sign a statement of intent to practice in a state where the practice of chiropractic is legal.

It is believed that the above is a rational and fair attitude upon the matter of chiropractic training.

FRANK T. HINES, Director.

#### GROUP INSURANCE.

Mr. Editor:

I enclose the full text of the recent opinion of the Attorney-General declaring that the group of the Massachusetts Medical Society for malpractice insurance is illegal. As I had a previous interview with you and wrote you a letter on the subject I naturally feel that this sustains my opinion at the time, and wish to point out that the plan that I endeavored to present for the New Amsterdam Casualty Company did not have the feature which led to the complaint of the group which you and your committee approved.

At the time of my interview I could not seem to make you see that it would be against public policy to prevent the doctors in good standing in your Society from joining the group policy unless they purchased the insurance of any specified broker.

With my plan in the New Amsterdam any doctor belonging to the Massachusetts Medical Society could join at the special rate irrespective of me or any other broker. Even if this plan were also technically illegal, no complaint would ever be made, and the Society would have been saved from getting into the present position of having recommended to its

members a contract which is not only specifically illegal but probably against public policy.

I mention in passing that the original company for this form of protection is the Physician's Defense Company of Fort Wayne, and their price for the \$10/30,000 limits is, I believe, only \$21.00, as against the \$28.50 of the present group, the coverage being practically identical, and the individual doctor being required to furnish his own expert testimony.

Very truly yours,

PAUL BURRAGE.

That portion of the Attorney-General's opinion specifically bearing on the question appears below:

"The question involved appears to be (1) whether it is permissible under the insurance laws to issue a group policy of this description, and (2) whether it is permissible to insure individuals under a group policy of the types hereto annexed at rates less than would be charged to the same persons had they applied individually for the type of policy issued to an individual. On the first of these questions there appears to be no express statutory provision definitely authorizing such insurance. The statutes provide for group life insurance policies and blanket accident and health policies. Group life policies were, however, issued in this Commonwealth before they were definitely authorized by law. While Section 3 of Chapter 175 of the General Laws provides that no company shall make a contract of insurance except as authorized by Chapter 175, it is probable that this language is of a general nature and that it is not necessary to find authority for the issuance of a definite type of policy in order for it to be legal. In regard to the second point, it should be stated that the company claims that this policy differs materially from the policy which would be issued to an individual, one particular point being claimed as a demonstrable advantage being the fact that all members of the Society who accepted insurance in the policy are bound to give free testimony in any action under the policy. The policy as issued differs from the regular physicians' and dentists' liability policy only in respect to the typewritten endorsements attached to the ordinary printed form. If there be a discrimination the statutory provisions under which discriminations have heretofore been held illegal are Sections 181, 182 and 183 of Chapter 175 of the General Laws."

You state in your letter that what is issue in this case is in effect a group policy, and it is not such a group policy as is authorized under G. L., C. 175, Sec. 110, and Sec. 133 as amended by the Acts of 1921.

G. L., C. 175, Sec. 3, forbids the making of a contract of insurance, except as authorized by said chapter, or Chapter 176 or Chapter 177. I can find no specific authority in Chapter 175 to issue this group policy, but the Legislature has apparently seen fit to indicate what kinds of group policies might be issued, and in authorizing the issuance of group policies it has confined it to cases of employer and employees, and has also required that such policies cover 75 per cent. of the employees before they may be written.

To hold that this group policy might be written for the benefit of the Massachusetts Medical Society and the Massachusetts Dental Society means that these policies may be issued notwithstanding Section 3, without specific authority and hedged around with no restrictions whatever. In that case they may be issued if only a very small percentage of either society takes advantage thereof. There are other distinct differences. In fact, which need not be enumerated, between this class of policy, issued to protect the individual member of either society from liability to third persons on account of his own acts, and the group policies authorized, which are to give

a measure of protection to the employee from accident and misfortune in the course of his work in the one case and to his family in the case of the group life insurance. In these group policies, also, the employer, in one case at least, has a distinct personal protection.

So far as your second question is concerned, I find no provision in the statute preventing these special rates, assuming that this class of insurance may be written in this particular way. The important question seems to be whether this form of insurance may legally be written without specific authorization by statute. Having in mind the plain wording of Section 3, I am of the opinion that it may not be.

#### ACKNOWLEDGMENT OF BOOKS FOR REVIEW.

The Doctor Looks at Literature. Joseph Collins. George H. Doran Company. 317 pp. Price, \$3.

The Dominant Sex. Mathilde and Mathias Vaerting. George H. Doran Company. 289 pp. Price, \$3.

Collected Papers of the Mayo Clinic, XIV, 1922. Various authors. W. B. Saunders Company. 1394 pp. Price, \$13.

The Riddle of the Rhine. Victor Lefebure Chemical Foundation, Inc. 282 pp.

Pathologie Medicale. Various authors. Masson et Cie. 566 pp. Price, 25 fr.

Physiotherapy Technic. C. M. Sampson. 443 pp. Price, \$6.50.

Lehrbuch der Grenzgebiete der Medizin und Zahnheilkunde. Various authors. Vol. I. 700 pp.; Vol. II. 682 pp.

#### NOTICES.

#### NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE.

Examinations of candidates for entrance into the Regular Corps of the United States Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C. . . . . September 3, 1923  
At Chicago, Ill. . . . . September 3, 1923  
At San Francisco, Cal. . . . . September 3, 1923

Candidates must be not less than 23 nor more than 32 years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon-General, United States Public Health Service, Washington, D. C.

#### A BUREAU FOR SUBSTITUTE DOCTORS.

Dr. W. M. Stevenson of North Easton, Mass., has suggested to the Secretary of the Society that it would be an accommodation for practitioners who need a vacation and physicians who may want temporary work if a bureau could be established for the purpose of providing substitutes as occasion may arise.

The JOURNAL is at the disposal of members of the Society and if there should be any considerable need

of a bureau of this character it could be provided. The common custom seems to be that men on vacations arrange for substitutes among their associates. If none are available a small advertisement which would cost about 75 cents might be all that is required.

#### NEW ENGLAND SURGICAL SOCIETY.

##### PRELIMINARY ANNOUNCEMENT.

The next meeting of the New England Surgical Society will be held at Boston, Thursday and Friday, October 18 and 19, 1923.

##### THURSDAY, OCTOBER 18.

8.00 A. M. Surgical Clinic at Peter Bent Brigham Hospital.

10.30 A. M. to 1.00 P. M. Reading of papers, Amphitheater, Harvard Medical School.

2.00 P. M. Scientific Program continued at Harvard Medical School.

7.00 P. M. Annual Dinner.

##### FRIDAY, OCTOBER 19.

8.30 A. M. to 10.30 A. M. Clinic at Massachusetts General Hospital.

11.00 A. M. to 1.00 P. M. Clinic at Boston City Hospital.

2.00 P. M. Presentation of papers at the Boston Medical Library.

#### CASES REPORTED TO THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH.

##### WEEK ENDING JULY 21, 1923.

Disease.	No. of Cases.	Disease.	No. of Cases.
Anterior poliomyelitis	2	Pellagra	1
Anthrax	1	Pneumonia, lobar	25
Chicken-pox	96	Scarlet fever	102
Diphtheria	95	Septic sore throat	2
Dog-bite	6	Suppurative conjunctivitis	13
Encephalitis lethargica	2	Syphilis	21
Epidemic cerebrospinal meningitis	5	Tetanus	2
German measles	7	Trachoma	4
Gonorrhea	65	Tuberculosis, pulmonary	122
Influenza	1	Tuberculosis, other forms	20
Malaria	1	Typhoid fever	11
Measles	236	Whooping-cough	114
Mumps	51	Hook worm	1
Ophthalmia neonatorum	17		

#### SOCIETY MEETINGS.

##### DISTRICT SOCIETIES.

September, 1923.—Meeting of Franklin and Hampshire District Medical Societies at South Deerfield.

Essex North—Combined Meeting with Middlesex North, Middlesex East and Essex South in October. Semi-annual Meeting at Haverhill, January 2, 1924. Annual Meeting at Lawrence, May 7, 1924.

##### STATE, INTERSTATE AND NATIONAL SOCIETIES.

September 11-12, 1923.—Celebration of the twenty-fifth anniversary of the Rutland State Sanatorium; sessions first day at Worcester; second day at Rutland State Sanatorium.

October, 1923.—Boston Health Show will be held in Boston October 6-13, inclusive.

October, 1923.—Meeting of the American Health Association will be held in Boston, October 8-13, inclusive.

October 18-19, 1923.—Annual Meeting of New England Surgical Society in Boston.

For list of Officers of the Massachusetts Medical Society, see page xiv of the Advertising Section.